XIII.

Maj. G. T. G.

VOL. II. JANUARY, 1849. NO. I.

THE

WESTERN JOURNAL,

OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS,
INTERNAL IMPROVEMENT, COMMERCE,

AND

GENERAL LITERATURE.

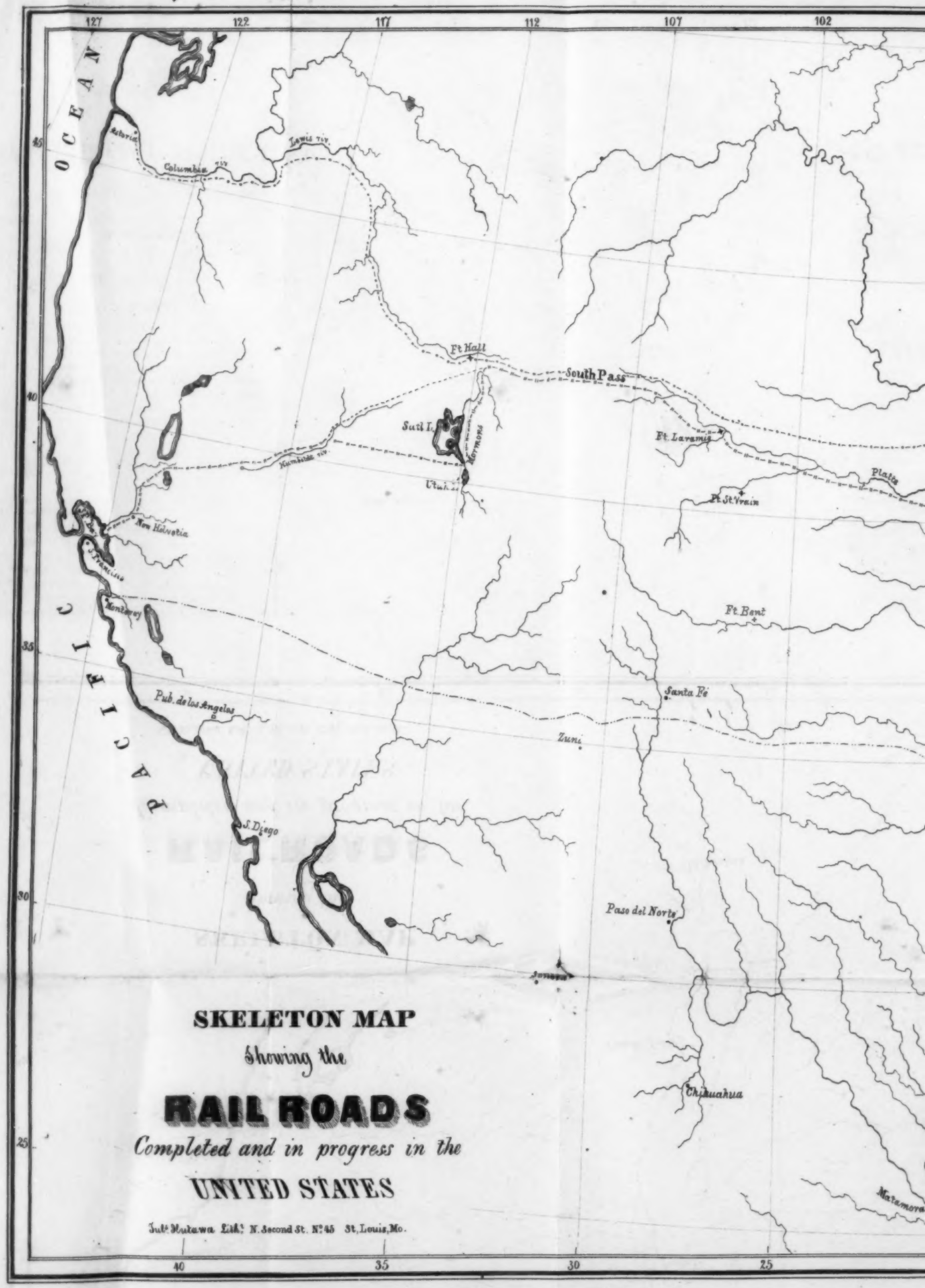
Agriculture and the Mechanic Arts are the basis of Civilization.

M. TARVER & T. F. RISK,
EDITORS AND PROPRIETORS.

ST. LOUIS:
CHARLES & HAMMOND, PRINTERS, CORNER MAIN AND OLIVE STREETS.

1849.

PUBLISHED MONTHLY, AT THREE DOLLARS PER ANNUM, IN ADVANCE.



SKELETON MAP

Showing the

RAIL ROADS

Completed and in progress in the

UNITED STATES

Jul.s Hutawa Lith.r N. Second St. N.o 45 St. Louis, Mo.

L. Superior
L. Michigan
L. Huron
L. Erie
L. Ontario
WISC.
OWA.
MICH.
ILL
IA
O.
PA
NY
VT
NH
ME
NJ
MD
D.
VA
KY
MO
TENN
N.C.
S.C.
GA
ALA
MISS
LA
ARK
FA
ATLANTIC OCEAN
Montreal
St. Johns R.
St. Lawrence R.
Ogdensburgh
Portland
Boston
Albany
Troy
Buffalo
Rochester
Pittsburg
Philadelphia
Baltimore
Washington
Cincinnati
Louisville
Nashville
Memphis
Charlotte
Raleigh
Wilmington
Charleston
Savannah
Augusta
Atlanta
Columbia
Mobile
New Orleans
Chicago
Detroit
Toledo
Cleveland
Pittsburg
Wheeling
Richmond
Norfolk
Lynchburg
Knoxville
Chattanooga
Montgomery
Selma
Vicksburg
Jackson
Natchez
Opelousas
Galena
Quincy
Springfield
Indianapolis
Terre Haute
Vincennes
Alton
St. Louis
Cairo
Hannibal
Independence
Prairie du Chien
Milwaukee
Pontiac
Dunkirk
Erie
Ithaca
Albany
Hudson
Utica
Syracuse
Rochester
Saratoga
Lewiston
Lockport
Harrisburg
Lancaster
Reading
Wilmington
Hagerstown
Cumberland
Winchester
Warrenton
Fredericksburg
Petersburg
Portsmouth
Halifax
Wilson
Goldsboro
Fayetteville
Camden
Florence
Orangeburg
Branchville
Sumterville
Kingsville
Hamburg
Granville
Springplace
New Echota
Athens
Tunnel Hill
Dalton
Marietta
Macon
Milledgeville
Forsyth
West Point
Columbus
Talladega
Brooklyn
Tuscaloosa
Selma
Montgomery
Jackson
Clinton
Woodville
Port Hudson
Bayou Sara
Opelousas
Alexandria
Natchitoches
Shreveport
Marshall
Clarksville
Paris
Jefferson
Texarkana
Little Rock
Van Buren
Fort Smith
Fayetteville
Batesville
Helena
Memphis
Jackson
Vicksburg
Natchez
Baton Rouge
New Orleans
Mobile
Pensacola
Tallahassee
Apalachicola
Columbus
Macon
Savannah
Augusta
Milledgeville
Atlanta
Athens
Tunnel Hill
Dalton
Chattanooga
Knoxville
Nashville

THE

WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

VOL. II. JANUARY, 1849. NO. 1.

TABLE OF CONTENTS.

ARTICLES.

I. A SYSTEM OF INTERNAL IMPROVEMENT FOR THE WEST.—A System of Internal Improvement should conform to the laws of commerce, as modified by the physical geography, water, climate, soil, mineral resources, and vegetable productions of a given region, and its relative position in regard to other countries; Roads and Canals the agents of commerce; the laws of commerce considered; causes modifying these laws in Europe and Asia; general system of improvement for the Valley of the Mississippi; particular or local systems; the termini of the works based on the Atlantic and Gulf of Mexico considered; all converge to the central part of the Valley of the Mississippi; Railroads from Savannah, Charleston, Richmond, Va., Baltimore, Philadelphia, New York, Boston, Mobile, Cincinnati, Nashville, &c.; a System of Internal Improvement for the State of Missouri; Railroad to the Iron Mountain; from the Mississippi river to the western border of the State; improvement of the navigation of the rivers the basis of the system; the economy of Plank Roads for agricultural districts; success of Plank Roads in New York—their history; Railroad to the Pacific.

By the SENIOR EDITOR, 1

II. COMMERCE OF THE EAST.—Modern History of Eastern Commerce; discovery of the route by the Cape of Good Hope; the establishment of the Portuguese in the East; the Spanish and Dutch Settlements; the British East India Company; the Danes—the French; treaty between Russia and China in 1689; overland trade between Russia and China; passage of Cape Horn by the Straits of Magellan; number of expeditions fitted out by Great Britain to discover a nearer route by sea, or across the American Continent; the Hudson's Bay Company; expedition of Lewis and Clark; ancient Indian Canal uniting the Pacific and Atlantic; sundry projects for uniting the two oceans by canal, since the discovery of America; distance from London to Canton by Panama; distance from London to Canton by the Cape of Good Hope.

By J. LOUGHBOROUGH, Esq., of Missouri, 9 to 18

EASTERN COMMERCE, No. III.—Navigation of the Missouri and Columbia rivers; history of the explorations of this route; Col. Benton's route; navigation of the Missouri; route by land across the Rocky Mountains; navigation of the Columbia river; mouth of the Columbia; Captain Sire, Lewis and Clark, Sublette, Pilcher, Cox, &c.; North Pass; South Pass; distances, dalles, velocity of currents, &c.; time and cost of transportation on this route compared to the route by way of the Cape of Good Hope.—ib. 18

III. THE RISE, PROGRESS, AND INFLUENCE OF THE FINE ARTS.—PAINTING. Its History; the old Masters; introduction of oil in Painting; Michael Angelo, Raphael, Titian Corregio, Claude Loraine; the School of Rome; Belshazzar's Feast of Martin; the Transfiguration, by Raphael; death of Raphael.

By ALFRED S. WAUGH, of Missouri, 29

IV. EDUCATION.—The importance of keeping the subject before the people; system of Public Schools in the several States; States that have adopted the free system; States that have adopted the rating system; amount expended by the several States in 1847, p. 37. Mode of raising school fund in the several States; constitution and laws governing the subject in Mississippi and Louisiana, p. 38 and 54. In Texas, Ohio, Michigan, Indiana, Illinois, Missouri, Iowa, Wisconsin, &c., p. 38-9. Amount expended in 1847 in Boston, New York, Philadelphia, Baltimore, Cincinnati, New Orleans and St. Louis, p. 40. Value of school land in St. Louis. p. 41. Estimate of the means of education in Missouri; cost of tuition in Boston and in St. Louis, p. 42. The importance of procuring competent teachers, p. 42. Manual Labor Schools, p. 45. Female teachers preferred, p. 46. Number of female teachers in Massachusetts, p. 46. Normal Schools, p. 47. Normal Schools in England, France, Germany, Russia, and other countries, p. 48. Court of School Commissioners, p. 51. Institutes for Teachers, and District Libraries, p. 52.....By JOHN H. TICE, Esq., of St. Louis, 34 to 54

V. IMPROVEMENT OF TIME.—The time that remains to an individual after the common wants and comforts of life are supplied, is wealth; may be usefully employed in removing and guarding against the cause of disease; the erection of buildings and shelter for stock; improving the soil, planting and cultivating gardens, vinyards, orchards, and ornamental trees; the importance of these improvements in a moral point of view; effects of destroying the soil illustrated; the "beautiful;" the emotions of beauty were designed to harmonize the feelings and affections with the laws and economy of nature; beauty the test of moral truth; the emotions of beauty excited by natural objects are more pure and more to be trusted than those excited by music; the pleasure derived from cultivated plants and trees, greater than that derived from plants and trees in their natural condition.....By the SENIOR EDITOR, 54

RAILROAD, CANAL AND STEAMBOAT STATISTICS.

Rate of Railroad freight and fare on sixty-eight Railroads in the United States..... 59

RAILROADS IN MASSACHUSETTS.—Statement of the length of eleven Railroads in Massachusetts, with their branches, together with their cost, including stations and machinery, and their income, expense of working, and rates of dividend paid in 1847..... 65

MASSACHUSETTS RAILROADS RECENTLY OPENED, WHOLLY OR IN PART.—Railroads chartered, companies organized, and amount paid in by the stockholders..... 66

TUNNELS ON RAILROADS AND CANALS.—In the United States, Great Britain, and on the continent of Europe..... 67

TOLLS ON THE NEW YORK STATE CANALS.—Amount of tolls collected on the New York State Canals during the season of navigation, in each year, since 1820..... 68

Statement showing the comparative ratio of expenses to gross receipts, and the comparative cost per mile run, of various railways, during the year 1846..... 68

Number of boats built at Cincinnati, and other points on the Ohio river, from 1st December, 1847, to 1st December, 1848..... 68

MANUFACTURES IN ST. LOUIS.

Manufacture of Cotton—of Cotton Batting and of Flour..... 69

WESTERN LITERATURE.

Western Law Journal—The Howard Queen..... 70

THE

WESTERN JOURNAL.

VOL. II. JANAURY, 1849. NO. 1.

ART. I.—A SYSTEM OF INTERNAL IMPROVEMENT FOR THE WEST.

In a country long inhabited, where the soil has been reduced to cultivation, the mineral resources ascertained and developed, and great commercial and manufacturing cities established, it requires but little intelligence or foresight to project and locate a system of internal improvement. In such a country, the utility or profits of a canal or rail way may be calculated with as much certainty as any of the more common transactions of business. But in one like the United States, and more especially that part west of the Allegheny Mountains, where but a small portion of the soil has been reduced to cultivation, and immense regions remain totally uninhabited—where the mineral wealth remains unexplored, and even the capacity of the rivers for navigation not well known—it requires much reflection and forecast to project a system of improvement that will be suited to the wants and demands of the country, when more generally settled, and its resources more fully developed.

We must first project a system of commerce corresponding to the physical geography, climate, mineral resources, soil, and vegetable productions of a given region; and also, to its relative location in regard to other countries, before we can arrive at correct conclusions in reference to a system of internal improvement. For, roads and canals being designed as the agents of commerce, should be so located as to conform to its laws, and facilitate its operations.

To enable us to comprehend the philosophy of commerce, we must consider it as one of the great agents of civilization, designed to establish social intercourse and sympathy between the inhabitants of every part of the earth; to the end, that one great principle of moral and social action may every where prevail. To enforce this design the products of the tropics were made to differ materially from those of colder climates; while the convenience and comforts of the inhabitants of these respective regions were made each to depend, in a great measure, upon the enjoyment of the products of the other.

Owing to this provision in the economy of nature, the products of the south seek a market in the north, while those of the north go south for consumption. But as the products of the extremes find a market

also in the central region, this, is indicated as the natural and most convenient place for all parties to meet and exchange their commodities. Hence, the natural and prevailing currents of commerce flow from the extremes of north and south, towards the centre; and again outward, distributing to each region the kind and quantity of commodities required for their consumption. This is the first great principle to be observed in a system of commerce; but owing to the irregular distribution of the minerals, soils, and waters, this principle is subject to many modifications, which diversify and give to certain branches of commerce every possible direction; yet these are but tributaries of the main current, and when united with it, conform to its laws.

In Asia and Europe, the nature of the social institutions, and the great number of nations differing from each other in their laws, genius, and habits, have tended to countervail and thwart this primary principle of commerce; and it is partly owing to these causes, that civilization has been so long confined to the more temperate regions.

Among the many advantages which the inhabitants of the Valley of the Mississippi enjoy, there is perhaps, none more important than that which arises from the fact that an entire natural division of the continent, extending through twenty degrees of latitude, with its system of water courses, from their sources to their final outlet to the ocean, is under the control of one government, inhabited by the same race, speaking one language and professing one religion.

When we contemplate a map of this region, it appears plainly, that nature has delineated the outlines of a system of improvement, conforming to the principles of commerce which we have endeavored to illustrate; but she has left the details to be filled up and carried out by the intelligence, enterprise, and industry of its inhabitants.

The Mississippi river, running from north to south, divides the valley into parts nearly equal, and constitutes the great commercial thoroughfare of this region; and should be regarded as the basis of a general system of internal improvement for the whole west, if not, indeed, for the entire Union. On this river, and within the central region, will be located the great commercial city of the valley—the place of exchange between the north and the south—the centre of a great system of internal improvement, as well as of commerce.

But in a region so extensive and so abundant in all the elements of wealth, there must be many great commercial cities, each having their own scheme of internal improvement; but still connected with, and constituting a part of the general system. Cincinnati, for instance, has already projected a system of improvement of her own, and with a forecast and enterprise unparalelled in commercial history, has made rapid strides towards its completion. But she does not deem her system complete, without a connection by railroad, with the Mississippi, at St. Louis; for this will bring her into full and complete communication with the great system of the valley. She is becoming a great producer, and it is her true policy to extend the facilities of distributing her products. When these arrive at St. Louis, they are then at the centre of the great commercial system, and may be thence distributed throughout its remotest range, to every point where a market can be found. In like manner, a great commercial city will, in time, grow

up near our western border, on the Missouri river. This must also have its own system of improvement; but still constitute a portion of the general system, by a connection with the Mississippi river. The principal towns and cities on the Mississippi, will also project systems of their own, calculated to accommodate the country around them; for, in a region so extensive this, if it were even practicable, it would not be good economy to locate every work so as to lead directly to the centre.

It is not a little remarkable, that all the principal cities on the Atlantic coast, when projecting systems of internal improvement adapted to their respective locations, should have aimed to connect their commerce with that of the Mississippi river; and if we trace their routes as projected on the map, we shall discover that they all converge to a point in the central region. The railway from Charleston, in South Carolina, uniting with that from Savannah, in Georgia, will be completed in a few years, to Nashville, in Tennessee, opening a communication with the Mississippi, through the navigation of the Cumberland and Ohio rivers. But it is obvious that this line of railroad will not stop at Nashville; for she will have a system of her own to build up, and will aim to connect with the Ohio river near the mouth of the Wabash, so as to be brought in a more direct communication with the east, and the lakes of the north. This point being reached, the importance of a connection with a road from St. Louis to Louisville, or Cincinnati, will appear so obvious and important, that this short section will doubtless be completed, and thus Charleston and Savannah will be connected by means of a railway, with the great western system, at St. Louis. Again: the road from St. Louis to Louisville, Ky., connects with the system of that city, and the improvements now contemplated in Kentucky uniting with the road from Richmond, Virginia, to the Ohio river, will open a continuous line from Richmond, also, to St. Louis. This is likewise the natural terminus of the lines of improvement from Baltimore and Philadelphia, the former pursuing the valley of the Ohio, and the latter traversing the central region between the Ohio river and the lakes. It will not be long before New York and Boston will be connected by a line of railroad with the Mississippi, at Galena; but it is quite certain that these great cities will not be content to confine their operations to the north, and give to Philadelphia and Baltimore full possession of the great central region. A line of railway from the western end of Lake Erie to St. Louis or Alton, will let them into the heart of the country, and no work in the valley would, perhaps, be more profitable to the stockholders. If the line of railway now in contemplation from Alton to Springfield should be completed, it will, doubtless, be extended sooner or later, so as to intersect with the Michigan road from Detroit to Chicago; and the Michigan and Illinois Canal may also be regarded as another branch of the same system. Again: the railway in contemplation from Mobile to the mouth of the Ohio river, will connect the waters of Mobile Bay and the intermediate country with the commercial system of the Valley of the Mississippi as completely as though the road were continued to St. Louis.

Should all these works be completed, one who was a stranger to

their history, would very naturally conclude that they had been projected by the people of St. Louis, and designed for her especial benefit; and would be astonished to learn that the inhabitants of this place had no hand in the matter, but that each project was conceived and carried out mainly by those residing at the extreme ends of the respective lines, and without concert with each other.

But we have digressed somewhat from our subject. We set out with the intention of saying something in regard to a system of improvement for our own State—a subject about which much can be said, but towards the consummation whereof we fear little can be done for many years yet to come. We are the advocates of every improvement that can in any way promote the development of our vast resources; but we must not permit our zeal to beguile us into the advocacy of impracticable or unprofitable schemes. In this age of steam and magnetism, few individuals can limit their views of internal improvement to anything short of a railway; this is quite natural, but it may well be questioned whether a railway can be constructed between any two points in Missouri with a fair prospect of reasonable profits to the stockholders, for many years to come. There is at present no point in the interior of sufficient commercial importance to afford a fair business to an extensive railway, and the country is not sufficiently settled in any direction, except, perhaps, near the Missouri river, to afford much business on or near the line between any two given points. It is probable, however, that the business of the western counties in the region of the Missouri river, would sustain a road from there to some point on the Mississippi, were it not that boats on the Missouri would still continue to carry a large portion of the freight; but it is quite certain that during the season of high water in the Missouri, a railway could not compete successfully with the river navigation. None can doubt the advantages of such a work to the country, but we apprehend that few would be found willing to invest their money in stock without a reasonable prospect of fair dividends.

The most plausible route for a railroad in Missouri, in our opinion, is on the line between St. Louis and the Iron Mountain. The demand for iron at St. Louis would in all probability be sufficient to support this road; and the material is doubtless sufficient in quantity to supply any demand for centuries to come; and were a railway constructed between these two points, it would probably stimulate the production of iron to an extent sufficient to afford a fair business on the road within a short time after its completion. If, when the proper estimates shall be made, it should be ascertained that such a result could be relied on, no other enterprize that could be projected at an equal expense, would tend so much to increase the wealth of the State. The line traverses a country more abundant in mineral wealth than perhaps any other of the same extent east of the Rocky Mountains; and besides iron, lead, and copper—granite, marble, timber, and fuel would constitute considerable items of transportation; while all the profits arising from these latter articles may be regarded as a clear gain to the wealth of the country.

Where transportation cannot be obtained by water, railways are to be preferred for the transportation of all heavy mineral products, build-

ing material, and fuel, wherever it is necessary to move these commodities beyond the distance of a day's drive with a common team; for, inasmuch as those who are engaged in producing and preparing these commodities for market do not produce stock and grain, the cost of transportation, whether with their own or by the teams of others, is so much to be added to the cost of producing the article; and whether it materially affects the profits of the producer or not, it must, in the end, be paid by the consumer; and it is to be observed, that the same principle enters into the transportation of all commodities, after they have passed from the hands of the producers. But in a country where agricultural labor and agricultural products are redundant, it is the true policy of the farmer to use his own teams in the transportation of his products, although he may not gain in money quite as much by the operation as would be esteemed a fair price *per diem* for his teams and drivers; but there is a limit, of course, beyond which this policy cannot be carried with profit. Few farmers, under the most perfect system of railroad or canal improvement can dispense altogether with the use of their teams; and therefore, the great point to be aimed at, is to extend, as far as practicable, the distance that these teams can be made profitable in transporting their crops. This is the principle which enters into the economy of constructing macadamized and plank roads; for any improvement that enables the farmer to increase the load or rate of travel, is so much directly gained to him, and indirectly to the community.

If the rivers of the State of Missouri were improved by dams and locks, so as to afford slack water navigation as far as practicable, there would exist no great necessity for railways; for such improvements, in connection with macadamized or plank roads, would afford the means of transportation to every part of the State. This is a system strongly indicated by the geography of the country, and is, in our opinion, better calculated to promote the agricultural interest than any other that could be devised with a reasonable prospect of being carried into effect. Such a system could be carried out with our own labor and without the use of any foreign material. These are important considerations; for, by furnishing all the appliances necessary to the consummation of the system, we should avoid that state of pecuniary embarrassment which has almost every where attended the construction of extensive railways.

The subject of plank roads is exciting a good deal of attention in some parts of the Union, and the opinion seems to be rapidly gaining ground that they are in all respects better than macadamized roads; and preferable in an economical point of view to railways, for short distances, except, perhaps, over great thoroughfares of traveling, and between points that furnish constant and large supplies of freight. In timbered districts they can be made for perhaps less than one-half the cost of macadamized roads, and do not require as much to keep them in repair. In the State of New York where they have tested every mode of improvement for the transportation of both freight and passengers, plank roads are rapidly growing into favor. We copy from the Lexington Express the following article, which that paper credits

to the Utica [N. Y.] Herald, for the purpose of showing the favorable opinion entertained of plank roads in that part of the country:

Success of Plank Roads—The people of this section are now reaping the benefit of the Plank Roads. We have now extending from this city four distinct lines of plank roads—one extending to Boonville, on the north, a distance of thirty-two miles; one to Bridgewater, about 20 miles to the south, and soon to be extended twenty miles further; another to Waterville, twenty miles south-west, and to be extended fifteen miles more to Hamilton; and the fourth extending westward to Rome, sixteen miles, and forming, by junction with others at Rome, an uninterrupted plank road communication with the northern parts of Oneida and Lewis counties, and Lake Ontario and Salmon river, in Oswego county. There are also several direct and lateral extensions of this line now in progress and in contemplation, which, when completed, will link the extreme southern counties of the State, and open an easy and rapid communication between sections which have hitherto enjoyed but litle intercourse with each other. All the plank roads that have been put into operation in this State are doing a prosperous and profitable business. The roads in this section are all reaping a rich harvest of toll. We mentioned a few days ago that the Rome and Oswego road had divided six per cent. on the profits of the last six months. We learn that, after paying this dividend, one-third of the tolls have been invested as a sinking fund, thus making the earnings of the road during the half year about nine per cent. on the capital stock. The entire cost of the road was about eighty-five thousand dollars. Since its construction a very large proportion of the travel reaching Oswego by way of the lake has gone over this route. We notice recently in a Milwaukie, Wisconsin, paper, that the receipts for tolls on the Chicago plank road already, amount to one hundred dollars a day, and it is yet completed only about twelve miles.

We have seen it stated that plank roads were first used in Russia—they have been used in Canada for many years, with success; and if we should conclude that their utility has been fairly tested, and that they are equal to their reputation, they are, doubtless, better adapted to the condition and general economy of our State, than any other mode of improvement yet discovered. And, withal, so little skill is required in their construction, that the farmers in a well settled neighborhood might, in a few years, by their own labor, construct all the roads necessary to their convenience, without drawing materially from the labor of their farms. By the use of moveable saw mills, the plank may be cut on the road; and, in timbered districts, could be afforded as cheap in Missouri, as in any part of the Union.

There is another advantage attending the construction of plank roads, arising from the fact, that whatever work may be done at any one time, may be completed and applied to immediate use. This will enable neighborhoods or companies to progress with the work by adding sections from time to time, according to their means, while it ensures to them also, the full benefit of all their labor.

From the foregoing considerations, we conclude that the improvement of our rivers, as far as practicable, constitutes the first important step in our system; and that the construction of plank roads, so as to unite with navigation at convenient points, will perfect a system more beneficial to the State than any other, perhaps, that could be devised in our present condition.

We are aware that the navigation of the Missouri is difficult, and at some seasons impracticable, for all useful purposes. We know,

furthermore, that an opinion is generally entertained, that it is not susceptible of improvement, beyond the removal of logs and snags; but until a survey shall have been made, and the causes of obstruction fully examined and considered by scientific individuals, we are unwilling to adopt the opinion that a stream affording so large a volume of water, and unobstructed by rocks and shoals, cannot be rendered navigable at all seasons of the year, ice excepted.

As the first step towards the establishment of this system, we respectfully suggest that a thorough and skilful survey should be made, of all the rivers within our borders, with the view of testing the practicability of their improvement; and further, that a general law be enacted, authorizing the formation of companies for the construction of works of internal improvement, under such limitations and restrictions as will be calculated to protect the community from the abuse of the privileges conferred.

The importance of enlarging the facilities of transportation is felt and admitted by every intelligent citizen with whom we have conversed; but we have met with no one who seems to have matured, in his own mind, any plan of operation. Much indeed, we may say that every thing—depends upon beginning at the right point; and to do this, we must first ascertain the true nature of the facts connected with the subject. When these shall have been acquired, we can then begin to reason intelligently, and our conclusions will be sound and entitled to respect. It is the duty of the State, to cause the proper facts to be ascertained and laid before the people, and this can only be done by the employment of competent engineers to survey our rivers; and we trust that the importance of this measure will be duly considered by our General Assembly now in session. We believe that surveys have been made of some of our rivers, and probably of all; but as we have seen no report by the engineers, we do not know whether these surveys are anything more than mere reconnoisances, or whether they were made with sufficient accuracy to afford estimates that can be relied on as a basis of calculation. It is a trite saying that "time is money," and it may be truly said that for all human purposes, time is power; but it is a power little susceptible of concentration. If the present generation desire to associate their names with the improvement of the State, and to enjoy the benefits to be derived therefrom, they should enter upon the work without delay; for if they postpone the initiatory step until another session of the Legislature, they will then have lost two years, and, consequently, a considerable portion of the power allotted to them for useful purposes.

One of the common errors committed in the prosecution of great public works, arises from a desire to execute too much within a given time: this is simply a miscalculation of power, a mistake that would not be likely to happen were the projectors thoroughly conversant with all the facts touching the subject. But it frequently happens that the work of internal improvement is delayed by a State or community until the necessity of its construction becomes so obvious and urgent that they are finally entered upon suddenly, and without either the information or means necessary to ensure success. Incited by such causes, efforts are made to execute in perhaps two or three years, works that

could not be conveniently and well done in ten—in such cases disappointment and loss necessarily insue; and the project fails entirely, or the deficiency of power must be supplied by anticipating the future, and drawing upon the resources of the next generation.

In presenting our views on the subject of internal improvement in Missouri, we desire to be understood as offering no discouragement to any project that has been contemplated in any part of the State: we should be happy to see each and all carried into successful operation, and shall be pleased to receive and publish communications in regard to the merits of any improvement projected or contemplated in the State, or indeed in any part of the Union. The opinions which we have given are the result of many years observation and reflectian, and if they should excite in the minds of our readers a more lively interest in regard to this important subject, we shall have accomplished all that we hoped for in the beginning.

There is, however, another consideration to which we wish to direct the attention of the reader before concluding this article. It will be recollected that we have endeavored to show that all the principal lines of improvement east of the Mississippi, converge to a point in the central part of this valley. Now it will be obvious to every intelligent and unprejudiced mind that this is the proper point at which a railroad to the Pacific should commence. And here we respectfully invite the attention of our readers to a series of articles on the subject of Eastern Commerce, from the pen of our talented contributor, J. Loughborough, Esq., of Liberty, Missouri. These articles contain an account of Eastern Commerce from its earliest history to the present time, and present, as we believe, the only plausible route for a railway to the Pacific, that has yet been suggested.

The project of a railway to the Pacific is one of such magnitude, that notwithstanding our conviction of its vast importance and ardent desire to see it undertaken, we have refrained from urging it upon the consideration of our readers lest we should be looked upon as visionary castle builders. But since the legislatures of eighteen States have adopted resolutions in favor of Mr. Whitney's scheme, and select committees of both houses of Congress have unanimously reported in its favor, it cannot longer be fairly viewed as a mere chimera of the imagination; but is to be regarded as one of the probable, if not certain enterprises of the age. Hence, there is no one subject connected with the public policy or economy of the Union, which involves so many interesting points for the consideration of the people of this country. The State of Missouri is especially interested in the location of the route as well as in the completion of the work; and her citizens would be unfaithful to themselves should they supinely submit the location and direction of the enterprise to others, without an effort to bring fairly before Congress and the people the advantages of commencing the route on the Mississippi river at some point within our own State. And we trust that our General Assembly will insist on the policy of causing the route to the Pacific to be thoroughly examined, under the direction of the General Government, before the nation commits itself in favor of any particular scheme.

ART. II.—COMMERCE OF THE EAST—NO. II.

MODERN HISTORY OF IT.

BY J. LOUGHBOROUGH, ESQ.

It is a great mistake, to suppose that the illustrious navigators of the latter part of the fifteenth century were a set of ignorant adventurers, destitute of science, and a knowledge of the history of the past, and impelled only by burning ambition, and foolhardy courage. Columbus was well aware of the spherical figure of the earth, before he sailed directly west, [*a*] and Vasco de Gama had pondered well upon the historical tradition preserved by Herodotus, concerning the circumnavigation of Africa by some Phœnician vessels, under the orders of Necho, king of Egypt, and the several voyages along the west coast of Africa, made by order of the kings of Portugal, under the bull of Nicholas V, issued in 1454, assuring to them exclusive rights of navigation and conquest in all newly discovered countries, before he doubled the Cape of Good Hope [*b*]; nevertheless, his having done so in 1499, has deservedly made his name immortal.

The new route thus opened to the east soon cut off the profits of its former masters, and gave the Portuguese the monopoly of the Indian trade. They destroyed the fleets of the Turks and Venitians, which were forthwith launched upon the Red Sea, to re-open the ancient channel of the trade, [*c*] and soon acquired entire control of it.

Francis of Almeida, the first viceroy of the king of Portugal, [from 1505 to 1509,] in the east, succeeded, in spite of the Mohommedans, in forming treaties with the native princes, by which the king of Portugal was acknowledged; and in extending the power and fame of his master. [*d*] Wherever he landed he found trading establishments, and he took possession of Ceylon in 1506. Alphonse of Albuquerque, his successor, [1510 to 1515,] confirmed their power there. He erected fortresses to protect their trading stations, and, by his vigorous policy, induced the princes to seek his alliance. He also took possession of the Moluccas, and thus obtained the spice trade, and closed his career by the conquest of Ormutz, on the Persian Gulf. [*e*] Soon after the Portuguese monopolized all the principal places from the Red Sea eastward to China, and for sixty years they held unrivalled sway, prescribing the terms on which others should trade, and fixing the prices of every thing. [*f*] The seat of the viceroy was at Goa. Originally, knights of chivalry went to the east, but subsequently avarice stimulated the adventurers, and the supremacy of the Portuguese was maintained by revolting schemes of intrigue, and acts of barbarism. [*g*] Weak kings succeeded to the great John II, and the good Emanuel. Under Sebastian, the instrument of the Jesuits, their dominion de-

a Irving and Robertson. *b* Southey. *c* Sismondi and Daru. *d* Lardner's Spain and Portugal. *e* Ibid. *f* Mills' India. *g* Southey.

clined. (*a*) The union of Portugal with Spain, decided their fall in the east, after sixty years of power and splendor, derived from this commerce. The Spanish kings neglected this trade, and robbery, piracy, and villany resigned in the east, until the advent of the Dutch. (*b*)

For some years succeeding the voyage of Vasco de Gama, the Dutch were eagerly engaged in abortive attempts to reach the East Indies through the Arctic Sea. (*c*) At length the harbor of Lisbon, which had been the emporium of the Indian trade, and the seat of opulence and power, was closed by Philip the Second, to the Dutch, as a punishment for the revolt of the United Provinces. (*d*) This excited the anger, the cupidity, and the skill of the latter. Cornelius Houtmann was sent upon an exploring voyage, in 1595, and happily returned, after making treaties with the Javanese. (*e*) A number of trading companies were soon after formed, all of which were united, in 1602, into a great East India Company, with power to make peace and war. (*f*) Then the great struggle with the Portuguese commenced. War, piracy, treachery, and intrigue, became the weapons of both parties. In 1624, Portugal lost the Moluccas; in 1663, Japan; in 1641, Malacca; in 1658, Ceylon; in 1660, Celebes; and in 1663, the Malabar coast. (*g*) During the latter part of the contest, the English entered India for the first time, effectually.

In the year 1600, queen Elizabeth gave the merchants of London an exclusive monopoly of the commerce of the East for fifteen years; and, soon after, the four first merchant ships of the East India Company, sailed to the Moluccas. (*h*)

In a very short period establishments were formed in Java, Amboyna, and Banda. In 1623, they were invited by the Persians to assist in driving the Portuguese from Ormutz. This was accomplished, and Gambroon established at the mouth of the Persian Gulf. (*i*) To this succeeded a variety of military and naval contests with the Portuguese, marked by recklessness of principle, and shocking and atrocious cruelties, until about the middle of the seventeenth century, when the Dutch and English finally crushed all opposition. [*j*] The native princes soon discovered that the Dutch were utterly regardless of their engagements, and that in violation of treaties, they sowed dissensions, prosecuted wars, and indulged themselves in every form of barbarity. Batavia, on the northern coast of Java, became, after 1619, the seat of the Dutch government in the east. [*k*] The Dutch retained most of their Indian possessions until the great European war with Napoleon, when the naval power of Great Britain gave them the preponderance. [*l*]

In the year 1618, an East India Company was formed at Copenhagen, by Christian the Fourth, and Boschower was despatched to the east. [*m*] He died; but his second in command settled Tranquebar, and erected the fortress of Dansberg. The opposition of the Dutch was too powerful, and the company surrendered their rights to the

---

a Robertson. *b* Mills' History. *c* Tytler. *d* Watson's Philip II. *e* Russell. *f* Hist. Holland. *g* Robertson. *h* Lingard and Henry. *i* Robertson. *j* Smollett. *k* Mills. *l* Scott. *m* History of Denmark.

crown; and for many years the Danes ceased to voyage to the east. In 1670, [*a*] Christian the Fifth formed a new company, with the powers of peace and war; but the vigorous resistance of the natives and Dutch, drove them to a surrender of their charter in 1729. Two years afterwards, Christian the Sixth revived the company for forty years, and at the end of this period for twenty years, but divesting it of the exclusive trade. [*b*] This company founded settlements at Malabar, on the Coromandel coast, in Bengal, at the Straits of Malacca; and, in 1790, the king purchased its privileges, and opened the trade to all Danes. [*c*]

Colbert, the celebrated minister of France, formed, in 1665, a company with fifteen million of livres capital, to which he gave the monopoly of the French trade in the east for sixty years. (*d*) Madagascar was chosen as their centre of operations. In five years their affairs were so badly managed, as to compel them to a surrender of their charter. During the remainder of the seventeenth century, the French trade to India was of trifling value. In 1714, the charter of the company was renewed; but again its affairs were mismanaged, and its powers surrendered under the administration of Cardinal Fleury. [*e*] He conferred their powers upon Orri and Fubuy, and from this period the French trade began to prosper. Pondicherry rapidly improved; the Isle of France flourished under Bourdonnaye, and a colony upon the Ganges grew under the care of Dupleix. In the naval war of 1745 the French maintained themselves with great valor; and, subsequent to 1748, their influence over the native princes raised their eastern power to its utmost height. [*f*] They obtained the possession of Golconda, Orissa, Coromandel, and other places. The war of 1755, was fatal to French power in the east. After a heroic struggle, they were stripped of every thing, except Pondicherry and a few trifling places. [*g*] Pondicherry, after being lost and won a number of times, was secured to them by the peace of Paris, in 1814, and is, we believe, yet retained. [*h*]

Subsequent to the formation of the first English company, by Elizabeth, a large number of other companies were organized; but the whole of these were finally united in 1702 [*i*] into one great one, which has secured to itself the command of a trade unrivalled for its extent and riches, and the civil and military supremacy successively over the native princes, until at this time, their territories count millions of square miles, and their subjects number hundreds of millions. Vast fleets and armies have been created by this company; immense empires have been subjugated, gorgeous thrones have been prostrated, powerful monarchs have been subjugated, kingdoms and principalities have been bartered like bales of goods; and, with the riches which England has derived through them, she has been enabled to contend single-handed against the combined power of all Europe—to triumph over them—to crush the greatest genius, and mightiest military hero the world has ever seen; and finally to impress her policy upon every

---

a Hist. Denmark. *b* Ibid. *c* Mill. *d* Mignett. *e* Guizot. *f* Hist. France, Lardner. *g* Smollett. *h* Scott. *i* Bissett.

portion of the globe, and secure an empire upon which the sun never sets. [*a*]

Before we proceed to a consideration of the modern attempts to reach the Indies westward from Europe, it should be remarked that the Russians, as far back as 1689, had succeeded in forming a treaty with the emperor of China, under the stipulations of which, an overland trade was carried on from Moscow to Canton. [*b*] It was under this treaty, that the first trade by barter with the east was conducted, the Russians taking into China furs, principally, with some other articles, and receiving in exchange teas, silks, &c. The value of this trade, at present, is stated at $19,629,350 per annum. The adventurers engaged in it, sometimes proceed altogether by land, from Moscow through Siberia and Mantchoo Tartary, a distance of more than six thousand miles, through wild and desolate regions, over abrupt and towering mountains, over naked wastes and frozen plains, across icy streams and lakes, enduring the utmost extremity of privation and fatigue, and exposed to the dangers to be apprehended from ferocious beasts of prey, and savages, treacherous, barbarous, and vindictive. [*c*] The trade of the southern provinces of the empire is carried on by descending, in boats, the river Wolga, sailing across the Caspian, and thence up the river Oxus, and overland by the ancient route from Constantinople to the western provinces of China. This route is much longer, but is relieved by the water carriage. [*d*]

From the period when Columbus discovered the new continent, by attempting to sail westward to India, the grand object was never lost sight of by the several European powers, which fitted out expeditions for discovery, conquest, and colonization. The Spaniards steadily kept this purpose in view, in all their voyages, from the time of Columbus to the expedition of De Soto. This last was the concluding attempt made by them, for the discovery of a navigable passage through the continents. [*e*] In all their hazardous adventures, they made but one discovery which seemed to promise a new and profitable route to India. This was the passage of Cape Horn by Magellan, and the voyage across the Pacific in 1520. [*f*] To this day, vessels occasionally sail by this route to the east; but it is only when it is made their interest to do so, by touching at intervening ports. With this exception, the passage by the Cape of Good Hope has, ever since its discovery, been the safest, cheapest, and most profitable route to India.

The first voyage of the Portuguese, for the discovery of a western passage to India, was that of Gaspar de Cortereal, in the year 1500. He proceeded six hundred miles along the coast of Labrador, and returned. [*g*] In 1501, he made a second voyage, and was never again heard of. His brother attempted a voyage in search of him, but met with a like fate.

The French voyages for the furtherance of this great design, were those of Giovanni Verrazano, a Florentine navigator, fitted out by Francis the First, who struck the coast of South Carolina, and followed

---

a Macauley. *b* Muller and Cox. *c* Kraschenikoff. *d* Clarke. *e* Ramusio. *f* Robertson. *g* Tytler.

it northward to the fiftieth degree of latitude; [*a*] of Cartier, who made three voyages, and ascended the St. Lawrence, in 1535, as high as Montreal; [*b*] and of Champlain, a fur merchant, who planted a colony at Montreal, and ascended to Lake Superior. [*c*] Their attempts by land, to find such a passage, were those of Marquette, in 1673, who descended the Mississippi to the mouth of the Arkansas; (*d*) of LaSalle, whose last words, "*La Chine*," spoken to his friends on his departure, were adopted as the name of the locality, which it ever since retains; and who described the Mississippi to its mouth, and was subsequently murdered by his companions, in the plains of the Arkansas; (*e*) of Hennepin, who ascended the Mississippi to the Falls of St. Anthony; (*f*) and a voyage undertaken under the auspices of the Baron de Carondelet, Governor General of Louisiana, in 1797, the parties in which ascended the Missouri some distance. (*g*)

The English attempts to discover this passage by sea, commenced with the voyage of John Cabot, in 1495. (*h*) Since that period, the following voyages have been made, under the authority of the British Government, to facilitate this discovery, viz: that of Robert Thom, in 1527; that of Mr. Hore, in 1536; that of Martin Frobisher, in 1576; of the same in 1577; and of the same in 1578; that of John Davis, in 1585; that of the same in 1586; and of the same in 1587; that of George Weymouth, in 1602; John Knight, in 1606; of Henry Hudson, in 1610; that of Sir Thomas Button, in 1612; that of Capt. Gibbons in 1614; that of Bytot in 1615; that of Bytot and Baffin in 1616; that of Munk (a Dane,) in 1619; that of Fox and James in 1631; that of Middleton in 1741; that of Moore and Smith in 1746; that of Pickersgill in 1776; that of Young in 1777; that of Captain John Ross in 1818; that of Lieut. Parry in 1819; of the same in 1821; and of the same in 1824; and that of Capt. Ross in 1829; and finally the recent voyage of Capt. Parry. (*i*)

The first English attempt to discover a passage to the Pacific through interior lakes and streams, was that of Jonathan Carver, (a Captain in the British service,) who adventured on his private account to win the honor of this grand discovery. In the year 1766 he left Boston, and by way of Albany and Michillimackinac, proceeded as far west as the river St. Francis, and from thence returned, after an absence of two years and seven months. It is in his narrative that the name of Oregon river first appears in *English* history. The French missionaries had heard of it near a century before. Carver died in the conviction that a communication would be found in the direction which he indicated. Richard Whitworth, a member of Parliament, formed a design of pursuing the discoveries of Carver, but the outbreak of the American revolution prevented it. (*j*)

The Hudson's Bay Company was incorporated by Charles the Second, with the express condition that the corporation should aid and assist in the discovery of the north-west passage. (*k*) It was under the auspices of this company, that the voyages of Knight, of Middleton, and of Moore and Smith, were undertaken. (*l*) But the public opinion

a Tytler. *b* Schoolcraft. *c* Bancroft. *d* Marquette Journal. *e* Joliet. *f* Hennepin's Travels. *g* Hist. Louisiana. *h* Tytler. *i* Tytler, Bancroft, and others. *j* Carver's Journal. *k* See Charter. *l* Greenhow.

did not permit them to pause with these efforts. It compelled them to fit out Hearne in three several journeys towards the Arctic Sea, ostensibly, at least, for this discovery. His first journey was from Prince of Wales fort, on Hudson's Bay, in November, 1769, only two hundred miles northward; his second was from the same point, to the vicinity of White Swan Lake, in 64 deg. north latitude; and his third was from the same point to the mouth of the Coppermine river, far into the Arctic Circle, being near 70 deg. north latitude. In these journeys, Hearne suffered incredible hardships and privations, from exposure to intense cold, toil, and difficulty in traversing jagged ridges and frozen streams, and for days together entire destitution of food. (*a*)

The next attempt of the English to connect the two oceans by lakes and streams, was that of Sir Alexander Mackenzie. On the 3d June, 1789, he set out from the head of Athabasca Lake, passed into Slave Lake, and thence down the Mackenzie river to its mouth, in latitude 69 deg., and longitude 135 deg. Again in October, 1792, leaving the same fort, he ascended the Unjegah or Peace river, to the Rocky Mountains, which he crossed in latitude 54 deg., embarked on Frazer's river, and, after descending some distance, left it, and proceeded westward on foot to Salmon river, which he descended in canoes to its mouth, near King's Island, in latitude 52 deg. The discoveries consequent upon this expedition, have enabled the British fur traders to make use of the interior streams for their trade. Mackenzie was then in the employ of the north-west company, a rival of that of Hudson's Bay; but his Government, nevertheless, knighted him for this service. (*b*)

This may be taken as the last adventure of the English to find a passage for commercial purposes. The solution of the geographical question of the junction of the waters of the Atlantic and Pacific, along the northern coast of America, has continued to be an object of prime scientific interest; and the several journies of Franklin and others, were fitted out for this interesting object.

It is well known that the expedition of Lewis and Clarke, in 1804–5–6, was set on foot by Mr. Jefferson, with this view; (*c*) and that since that time, a number of fur traders, and others, have given us some accounts of the course and character of western streams. (*d*)

Having examined the various attempts to discover a natural navigable passage through the continent, let us now turn our attention to the suggestions made at several times, and by a number of persons, respecting the practicability of uniting the eastern and western oceans by a canal or railway.

It is not generally known, and as matter of curiosity the fact should be recalled, that long before the discovery of America the two oceans were actually united by a canal. This canal connected the river Atrato, which falls into the Gulf of Darien to the southeast of the Isthmus of Panama, with the Rio San Juan, a small stream, flowing into the Pacific Ocean. This canal was carried through the only known entire

a Hearne's Journal. *b* Mackenzie's Travels. *c* Jefferson's Letter to L. &c. *d* Pilcher, Bonneville, Hunt, Ashley, Sublette, &c.

interruption of the chain of the Andes, and was navigated in canoes by the natives. (*a*)

In 1521, Cortez, whose mind was alive to every circumstance calculated to reflect glory upon his name, caused a survey to be made of the Isthmus of Tehuantepec, with the design of uniting the two oceans. Subsequently this became the route for the Manilla merchants, to cross over from Acapulco to the Mexican Gulf. (*b*)

The first modern project for uniting the two oceans by a canal, was the one of M. Martin de la Bastide, who proposed to unite the river St. John, which flows into the waters of the Mexican Gulf, to Lake Nicaragua, by a canal, and the Lake with the Pacific; but M. Bastide forgot to ascertain, (which is true,) that the Lake is too much elevated to connect it with the ocean, without many locks, and that the St John is interrupted by many falls.

In the latter part of the seventeenth century, a company was organized in Scotland to open a communication across the Isthmus of Darien; but the influence of the East India Company, which dreaded the loss of its monopoly, prevented the government from acceding to the proposition. (*c*) Some time afterwards, its enterprising projector, William Patterson, revived the scheme. With a capital of £700,000, five ships, and 1200 men, he landed upon the Isthmus and attempted to found a colony; but being denounced and abandoned by his own government, this colony was attacked simultaneously by disease, famine, and a large Spanish force, and finally compelled to abandon the enterprise in despair.

From that period to the present, the project of dividing the Isthmus has frequently occupied the attention of politicians and commercial men; but until within a few years, no actual efforts have been made to accomplish the design. Towards the end of the last century, an accident gave to the Isthmus of Tehuantepec fresh importance. Some brass pieces, with the stamp of Manilla upon them, were found by the Viceroy Bocareli. (*d*) The archives of the imperial city of Tehuantepec revealed the fact that those pieces had been transported from the Pacific to the Gulf, partly by land and partly by water, the route being from the Pacific up the Chickapa, across the rual-passo; thence, by land, over the great Cordilleras, to the head waters of the Coatzacoalcas, which empties into the Gulf.

The sudden interest thus excited, did not die away until the year 1814, when the Spanish Cortez actually ordered the canal to be made. Under this order a reconnoissance was made by Gen. Obregoso, and then the matter was dropped by the Spanish government. (*e*)

This enterprise found its next advocate in the immortal Bolivar, who, in the year 1827, appointed a commission to ascertain upon actual survey, the best line of communication, either by canal or railroad. (*f*) The commissioner, after surveying the route, made a report in favor of a canal, accompanied by an estimate of a French engineer, who calculated that a canal, forty miles in length, would unite the two oceans, at a cost of three millions of dollars. The early death

---

a Malte Brun. *b* Prescott. *c* Wilkes. *d* Lt. Maury. *e* Wilkes. *f* Hist. S. America and Mem. of Bolivar.

of the illustrious patron of the enterprise, put an end to the further prosecution of it.

In the year 1841, Gen. Santa Anna, the then President of Mexico, empowered Don Jose Garay to have a survey made for a canal across the Isthmus of Tehuantepec. This survey was made during the years 1842 and 1843, by Cayetano Moro. (*a*) In the WESTERN JOURNAL for May, 1848, this survey is examined by Lieut. Maury, who had a copy of it in his possession, and its folly and impracticability are amply demonstrated. The reader of this article will please turn to it.

Under the especial patronage of M. Guizot, the late Prime Minister of France, a private survey of the Isthmus was made by French Engineers. The details of this report, we believe, have not as yet been made public. Taken in connection with some other circumstances, we have conjectured that the French statesman had the double design of obtaining the control of a new route into the Pacific, and of planting a French colony in California. Recent events in Europe and America, have concurred to frustrate this design. (*b*)

The last step of importance taken upon this subject, was that of our own Executive, in instructing our Commissioner, in treating with Mexico, to endeavor to obtain an exclusive right of way across the Isthmus of Tehuantepec, with the purpose of constructing a canal or railway by the Government, should its constitutional powers admit of it; and, if not, of conferring the privilege, with ample protection, upon individual citizens. For many reasons, we are thankful that this scheme has failed of execution. (*c*)

Will it be believed that, after so many efforts and so much expense towards the cutting a canal across the Isthmus—efforts planned and encouraged, too, by great statesmen and learned philosophers—for the purpose of shortening and cheapening the European route to the East Indies, the facts so turn out, that if such a canal were now made, free of cost, and large enough to float heavy vessels, the route would still be inferior, in every respect, to the one at present in use? Yet such is undoubtedly the truth. Statesmen, and other schemers, have calculated as if the earth were a cylinder, and not a sphere—as if a degree of longitude were as broad in the Arctic Circle, as upon the equator. Let any one take a good globe, and make the proper measurements upon it, and he will find that

From London to Panama, 81 deg. of longitude and 42 deg. of latitude must be overcome, which, in a direct line, would vary little from - -	5,868 miles.
From Panama to Canton is 170 deg. of longitude, of 60 miles to the degree, and is in a direct line - - - - - - - -	10,200 "
Making from London to Canton, via. any canal for the various places proposed, -	16,068 "

From Canton to England, via. the Cape of Good Hope, in the season of the north-east monsoon, is—

From Canton, through the China Sea, to the Equator, is 1,320 miles.

---

a Com. Perry. *b* Courier d'Etats Unis. *c* Executive Documents.

From the Equator to Sunda Straits, in 12 deg. of south latitude,	750 miles.
Through the region of the southeast trades, to 27 deg. south latitude, and 50 deg. east longitude,	3,200 "
Thence to the Cape,	1,560 "
From the Cape to London,	6,900 "
Total,	13,730

Making the route through the canal 2,338 miles farther than the present one. Again:

From Canton to England via. the Cape of Good Hope, in the season of the southwest monsoon, is—

From Canton to the Straits of Formosa,	480 miles.
Thence to Pill's Straits, passing near the Pelew Islands,	1,300 "
Thence to Alla Straits,	1,200 "
Thence to 27 deg. south latitude, and 50 deg. east longitude,	3,900 "
Thence to the Cape,	1,560 "
Thence to London,	6,900 "
	15,340

Making the distance through the canal, at the most unfavorable season for navigation, around the Cape, 728 miles farther than the present traveled route.

Again: From England to Singapore, during the season of the northeast monsoon, by way of the Cape of Good Hope, is 2,318 miles nearer than by way of the Panama canal, at the same season; whilst from London to Valparaiso, on the west coast of South America, by way of the canal, would be only 422 miles nearer than the present route, which advantage is over balanced by the increased difficulties of navigation.

It must be remembered that all these distances are calculated on a straight line from point to point; but vessels would be as much impeded by winds and currents on one route as the other. These facts, taken in connection with the considerations, that it is extremely doubtful whether a canal can be cut at all; (*a*) almost certain that one of sufficient size to dispense with trans-shipments could not be made; (*b*) perfectly certain that if made, the outlets of it, east and west, cannot be secured from bars, &c.; (*c*) and undoubtedly true that for a greater part of the year one day of exposure to the malaria of the Isthmus is fatal to human life; (*d*) render it both unwise and impolitic to expend time and means upon such a project. If the commercial route to China cannot be shortened, what adequate motive can there be for such undertaking? It may be said that such a canal would enlarge our commerce on the west coast of America, and at the same time enable us to communicate more readily with our possessions on the Pacific, and thereby facilitate our municipal regulations, and draw more closely the bonds of our extended territorial empire. These considerations are, in some measure, true, but the improved advantages would

a Malte Brun. *b* Ibid. *c* Maury. *d* Maury.

certainly not repay us for the expense of cutting a canal and constructing a railroad across the Isthmus, especially when it is considered that a heavy expense would be annually incurred in protecting it, and that its existence would almost certainly involve us in difficulties and wars. But the *decisive* answer to all such projects is, that it is *impossible* to make either a canal or railroad, which shall be of much commercial value; and therefore, it is a waste of time and ink to indulge in such speculations.

In our next number we will endeavor to estimate the capacities of the Missouri and Columbia rivers for commercial purposes, to ascertain whether their navigation is susceptible of profitable improvement —to ascertain whether a railroad can be constructed from our western border to the Pacific—whether the construction of such a road would be preferable to the adoption of the rivers as the commercial route, and finally, what should be the eastern and western terminus of such a road, and the intermediate route over which it should pass.

NO. III.

NAVIGATION OF THE MISSOURI AND COLUMBIA RIVERS.

The next scheme in order of time to that of dividing the Isthmus, for opening a new route to the trade of the East, is the one which proposes to ascend and descend the Columbia and Missouri rivers, to and fro, and thus shorten the route. This idea originated, we believe, with the Baron de Carondelet, who, in 1796, despatched Don Jaques Clamorgan, with the approbation of Charles IV, King of Spain, to the sources of the Missouri, and thence to the Pacific. Clamorgan, who was a citizen of St. Louis, prosecuted the enterprise some distance up the Missouri river, but without accomplishing the views of his employer. (*a*) A little previous to the acquisition of Louisiana, the attention of Mr. Jefferson was attracted to the subject, but the views of this eminent statesman were limited, we believe, to geographical discoveries, to acquisitions in geology, zoology, and botany—the situation and characteristics of the Indian tribes, and the means of conducting an interior commerce. (*b*)

From the period of the return of those brave, faithful, intelligent, and enterprising travelers, Lewis and Clark, who were despatched west by Mr. Jefferson, many persons began to speculate upon the commercial value of our western streams, and upon the possibility of diverting

---

a Col. Benton. *b* Jefferson's Letter to Lewis and Clark.

at least the commerce of Western America, if not some portion of that of the East Indies, into this new route. At length, in the year 1818, Col. T. H. Benton, the present distinguished senator from this State, published in a St. Louis paper, a number of able articles, touching the importance and value of Oregon, and the commerce of the Pacific. In one of these articles it is formally proposed to American merchants, to abandon sea voyages to the East, and adopt the line of communication discovered by Lewis and Clark. The change is urged by Col. Benton upon the grounds that the new route is preferable "in shortness of distance, in safety, in cheapness of transportation; and in substituting a change of commodities for a trade in gold and silver."

The route as proposed, consists of four parts: 1. A river navigation up the Missouri; 2. A land carriage across the Rocky Mountains; 3. A river navigation down the Columbia; 4, A sea voyage across the Pacific.

In order to estimate the practicability and value of this route, we shall briefly examine each of these four parts, and lastly endeavor to ascertain whether, if practicable, in the full extent of the projector's views, a commerce with the East through this channel would be safer, cheaper, and in other respects preferable to the one carried on by way of the Cape.

1. *The Missouri River.*—This river should be considered in two aspects—in seasons of high, and of low water. The spring and summer freshets usually occur about the latter part of March, and continue until the middle of July. This is on the lower portion of the stream; the period of its continuance decreases as the river is ascended, until at the mouth of the Yellowstone, the freshet rarely lasts over two months. During this spring flood, steamboats of light draught have ascended some distance above the Yellowstone; but they are in some danger of being caught there, and compelled to remain through the winter. It must be recollected that, except during the freshet, steamboats even of small size, ascend above the Council Bluffs with great difficulty, and rarely attempt it. It is also during the freshet that the fur traders uniformly descend with their batteaux to St. Louis. *They never attempt to do so at any other period.* [*a*]

In periods of low water, keel boats and other light craft may be propelled up the river at the rate of about twenty miles per day, with the cordelle and pole; and some instances have occurred of very light steamboats ascending, with immense difficulty, as high as Cheyenne river; [*b*] but in low water neither keel boats or batteaux can be brought down the stream. The reason of the difference is, that in ascending, if bars are struck, the boat is easily backed off; but in descending it is very difficult, and sometimes impossible, to recover the channel after the boat has landed on a bar. The author of this article descended the river in the fall of 1843, from near the mouth of the Yellowstone to Council Bluffs, in a twelve foot canoe, with a single companion, and no other burthen than provisions and bedding. Scarce a day passed, of the thirty-eight weary ones spent in this journey, without his being compelled to get out and drag the canoe off of bars.

a Derived from the traders. *b* Ibid.

Major Long says: [*a*] "In October, 1819, I descended in a canoe from near Council Bluffs to the mouth of the Missouri; and the depths in the channels across the bars, not exceeding thirty inches;" and he adds that it cannot be improved.

Capt. Siré, [*b*] whose statement is corroborated by P. Chouteau, Esq., states: "I navigated boats on the Missouri river for twenty-five years. From St. Louis to Council Bluffs, there is high water for three months in the year, during which a steamboat of 250 tons might be taken up in nine or ten days, a distance of 700 miles. For this three months, there is an average of six feet of water. During this period the cost of transportation is one dollar per hundred. From St. Louis to Council Bluffs, the river is closed with ice for four months of the year, and the ice becomes five feet thick.* For the remaining five months of the year, the water is low, varying from thirty inches to four feet; for three months a steamer might take up seventy-five tons, but for the two months lowest stage, not over forty tons, and then occasionally discharge. During the five months of low water it requires fifteen days from St. Louis to Council Bluffs, and the cost $2 50 per hundred. The navigation down the river from Council Bluffs, though more rapid, is more dangerous and destructive. A good boat will not last longer than three years. This river is such that it cannot be depended on, nor can it be made a slack-water navigation—dams could not be erected to stand; the current is rapid, and bed and bottom all quick sand. For 250 miles above Council Bluffs, to near the Big Sioux, the river is narrower and better than for some distance below; thence to the Yellowstone the navigation becomes extremely difficult, on account of the width of the river. "Even in high water" the depth up there "is only 4½ feet." The freshet commences up there the latter part of May. "During the high water he has taken to Fort Pierre 150 tons, and to the Yellowstone 50 tons. During high water the current is very rapid, and would require to the Yellowstone forty-five or fifty days, and at a cost of transportation of eight dollars per hundred. At low water the river cannot be navigated. Between high and low water the passage may be made in thirty-five or forty days, because the current is not so rapid, with fifty tons, at six dollars per hundred."

Such is the testimony of one of the most competent judges, and the writer will add, that the facts are verified to him by a large number of mountain traders, of experience and intelligence. It should be added, that from the Sioux down, the river swarms with snags, and that its bars are in a course of perpetual change—thus rendering the navigation difficult and uncertain. So much for the first portion of the new route to India.

2. *Land carriage across the Rocky Mountains*,—The writer of this article has found himself in some difficulty in attempting to reconcile the views of Col. Benton, announced in 1818, (his original plan,) with those contained in his celebrated speech on the Oregon Treaty, and in a letter addressed by him to the Hon. Robert Smith, Chairman of the Committee of the House upon the Oregon Railway. In the essay of 1818, this language occurs: "It was the fate of Lewis and Clark to

a Letter to Whitney. *b* Statement for Whitney. *Query—Ed.

fall upon difficult parts of this mountain, where its lofty summit was *covered with snow twelve feet deep in the month of June.* At the same time, at the distance of one day's journey further south, an easy and practicable pass presented itself, at which these formidable mountains dwindled down to an ordinary ridge. This gap is known by the name of the *Southern Pass*, and has been repeatedly traveled since the time of Lewis and Clark. Many citizens are now in this territory and some in this town, who have crossed at the pass, and who aver it to be free from difficulty, and easily traveled with loaded wagons." This evidently alludes to the *South Pass* through which Fremont went and which he describes; for it is not the fact that "many citizens have crossed at the pass" at the head of Medicine-bow river, a branch of the Missouri—the fact being, that the account of Lewis and Clark is the only account we have of this pass.

But, be this as it may, how are we to reconcile the above paragraph with the following, from the letter of the same author, to Mr. Robert Smith: "There are two main routes for traveling between the valley of the Mississippi and the Columbia; one through the *South Pass*, on the line of the great Platte, and Lewis' Fork of the Columbia; the other through the *North Pass*, on the line of the Missouri, and Clark's Fork of the Columbia. The pass through the Rocky Mountains, on this (North Pass,) route, is perfectly good, and the way good all the distance from the forks of Clark's river to the great falls of the Missouri. It is an old Indian and buffalo road, which *Lewis and Clark traveled on their return;* and the country along it is rich in grass, and not destitute of fertile land."

The truth seems to be that, when writing in 1818, Col. Benton had in his mind some route near the one over which Lewis and Clark passed *on their outward trip*, and which he supposed to be by the way of the South Pass; and overlooked the fact that, *on their return*, they traveled over the very ground which he had in his mind, and which he has, in 1846, adopted as a portion of the connecting line of land travel between the waters of the Atlantic and Pacific.

In traveling to the Pacific, Lewis and Clark ascended the Jefferson Fork of the Missouri, to its source; and thence in a general direction westward, across Clark's river to the Kooskoosie, a tributary of Lewis' Fork of the Columbia, down which they descended, in canoes, to its mouth, and thence onward. On their return, they followed nearly their former route as far as Clark's river, from whence Capt. Lewis moved north and east to Medicine-bow river, through the *North Pass;* and Capt. Clark ascended Clark's river some distance, and passed over to the sources of the Yellowstone. (*a*)

They seem not to have supposed Clark's river fit for navigation; for, in their journal, they have indicated a route from the great falls of the Missouri to the Kooskoosie, as, in their opinion, the *only* land route for connecting the eastern and western waters. Of this route, the portion through the North Pass, 167 miles to Clark's river, is very good; and of the remaining portion, 33 miles is tolerable, and 140 miles is "over rugged mountains, 60 miles of which we found

a Lewis and Clark's Journal.

covered with snow from two to eight feet deep, on the last of June." Whole distance from the great falls of the Missouri to the Kooskoosie, 340 miles. (*a*)

The only other account of this region which we have is that of Maj. Pilcher, an old fur trader, who was in that country about the year 1824. He states that the distance from the great falls to Clark's river is only 150 miles, (in which he is probably mistaken); that Clark's river is navigable for batteaux the greater part of its course; and that near its mouth rapids occur, which are *impassable*. Therefore, the fur traders make a portage of 60 miles across one of its bends, to Fort Colville, on the Columbia, just above the Kettle falls. (*b*) This last 60 miles is rugged, mountainous, and difficult. (*c*) It is a singular fact that these falls of Clark's river are not mentioned by Father De Smedt, who gives us many details respecting the vicinity. The necessary land travel then, according to Pilcher, is 210 miles at the least, 60 of which is over stupendous mountains. In Col. Benton's speech on the Oregon treaty, this suggestion of Pilcher's is adopted. Such is the *land carriage across the Rocky Mountains*.

3. *A river navigation down the Columbia.*—Three great branches, fed by many tributaries, unite to form the Columbia. (*d*) The northern branch, which is usually designated as the Columbia proper, takes its rise in the north-east corner of the territory; and, flowing southward several hundred miles, over many rapids and falls, and through tremendous mountain ranges, receives the river Clark, which has its origin in a direction nearly due east from Astoria, and in the vicinity of the sources of the Missouri, and descending 700 or 800 miles, making a detour northward unites with the northern branch, near Fort Colville, where their united currents, after descending about 200 miles receive the waters of the Lewis Fork, which heads to the south of the Clark, and near the sources of the great Platte.

All these streams take their rise at immense elevations, and descend over a succession of dangerous rapids and falls. To give some idea of the character of these streams in low water, let us cite some facts: In 1817, Mr. Ross Cox, a clerk of the north-west company, ascended the Columbia from Fort George to the source of the north branch, with a party of voyageurs. After passing the cascades, or rapids, with two portages, they arrived at the great *Dalles*—making portage they arrived at the little *Dalles*—portage, and thence to the great falls—portage, and next day by several rapids with portages—thence to the great rapids—thence passing Lewis' fork to the Priest's rapids—portage, and thence to Pasquin's rapid with portage—thence to Rocky Island rapid—thence to *La rapide de Ignace*, where the river is narrowed between rocks, and, consequently, from this upward, very swift—next day Grand rapid—thence to the Kettle falls and bad portage—thence to the first Dalles, with a portage of one mile—thence through two lakes to the second Dalles, with bad portage—thence to upper Dalles, and bad portage—thence to Rocky Mountain portage, the extreme point for canoes. (*e*)

---

a Lewis and Clark's Journal. *b* Pilcher's Memoir, Senate Doc. No. 39, Sept. 1830–31. *c* DeSmedt. *d* Fremont, Greenhow, DeSmedt, &c. *e* Cox's Narrative.

Now take Lewis and Clark down the Kooskoosie, a branch of Lewis river, and thence on the Columbia: From September 25th to October 10th, they note 44 rapids and a number of shoals to the mouth of the Kooskoosie, a distance of only 60 miles—in the next 30 miles, 9 rapids. From 12th to 15th October, upwards of 8 rapids—thence to the mouth of Lewis river, 1 rapid of 3 miles length, 1 bad fall, and 4 rapids—in the next 36 miles, 3 rapids—next 42 miles, 2 rapids—then a number of dangerous rocks and several rapids—then the great falls, 37½ feet—then the rapid below the fall, or Dalles—then the cascade, with three miles portage—and thence to the Pacific. By Col. Fremont, all the rapids below the Dalles are included in the term "the cascades." Lewis river is probably not more rapid of descent; but it is so impeded and blocked up with rocks, that even the fur traders never ventured to navigate it in light canoes. (*a*)

When it is considered that, at a number of these rapids and falls, portages not only of cargoes, but of the boats, must be made, as at the first *Dalles* above the Kettle falls, where the boats of the fur traders are carried one mile over rugged cliffs; (*b*) we think no other evidence need be adduced to prove that, for any other craft than light canoes, or for any other trade than that of furs, these streams are wholly useless. To think of a commerce with India through such a channel, in low water, is, to say the least of it, altogether utopian.

But we are told, 1st. (*c*) That there is no ice on the waters of the Columbia, which will obstruct navigation seriously. 2d. That there is a rise of sixty feet, "and that annual and punctual." 3d. That "no sunken trees encumber its bottom." 4th. That, "at the head of tide water, (180 miles,) are the first rapids, and to this point the river is navigable for merchant ships *of any size*, all the year round." 5th. That "this rapid is occasioned by a shoal, two miles in length, where the fur traders make a portage of that distance, and re-enter the river above, which is deep and gentle to the foot of the Great Falls, distant about sixty miles;" these falls are only 37 feet 8 inches high, and are easily passed by a portage of 1,200 yards." 6th. The navigation is then good for boats of a large size to the confluence of Clark's river, between three and four hundred miles." 7th. That, from Fort Colville, a portage of 60 miles is made to Clarke's river, to avoid impassable falls in the river. 8th. Then Clark's river is ascended 300 miles, to the *North Pass;* and 9th. The ascent of the Columbia and Clark's river, by this route, is not more than 1,000 miles, of which near 200 is tide water, about 300 miles is fitted for boats of one hundred tons, and the remainder for boats of twenty or thirty tons.

Now, to all these facts and arguments, the answer is easy, plain, and perfectly conclusive: 1st. So far as respects the existence of ice, as an impediment to navigation, let us hear Mr. Ross Cox, who spent several years upon the Columbia, travelled up and down it a number of times, engaged in the fur trade; and certainly, by his daily intercourse with the traders and voyageurs, must have been better enabled to judge, than Lewis and Clark, who spent only one season in the

---

a Fremont and others. *b* Cox. *c* Benton's essay of 1818, and speech on Oregon treaty, 1846.

country, that season near the mouth, where there is no ice, and who never saw any one who had navigated the river at all. Cox's party left Fort George on the 19th November. He says: "After passing the second falls the cold became more severe, and occasional pieces of ice drifting down the current." Again: "As far as the entrance of Lewis river, the navigation was tolerably free; but from thence the masses of floating ice became so large and numerous, that our frail little barques were in momentary danger of being stove to pieces, and it required all the skill and labor of our men to avoid them. For three days our advance was slow through this dangerous navigation; but, early on the fourth, a scene presented itself, which seemed likely to put a final stop to our progress. Some large masses of ice got entangled among the numerous rocks of a long and crooked rapid; these were quickly followed by others, until the whole presented a line about a quarter of a mile in length, of high, sharp, and fantastically shaped glaciers." Some day or two after, "we had ascertained that the river was frozen a considerable distance; and, during a walk of three miles, it was one firm, thick body of ice." And here the party were ice-bound until the middle of February following, "when the loud crackling of the ice, gave notice of its continual disruption," and in some days the ascent was resumed. So that, instead of no ice in the Columbia, we find it absolutely icebound for three months of the year.

2d. There is a rise of thirty to sixty feet annually; (*a*) but, as these streams rise at nearly the same elevation with the Missouri, and only traverse less than one-half the distance, this freshet must, of course, be of much briefer duration; and three months is the maximum on the lower portion of the Missouri, and two months on the upper. With a rise of sixty feet, even, on the Missouri, would it be *possible* to ascend it?

3d. As respects this assertion about snags, &c., let us hear Ross Cox, of the lower Columbia. He says: "The navigation is often obstructed by sand banks, which are scattered over different parts of the river, below the rapids." Again, "Great caution is required to avoid sunken trees, called snags or planters, and by the Canadians, chicots. Again, above the great falls, "the river, for some distance, is deep and rapid. The canoes were dragged up several miles, and some of them damaged by rocks." Again, on lower Columbia, "some of the canoes having struck on sunken trees, we were obliged to put ashore for a couple of hours, to repair the damage and dry the goods." Again, "several canoes struck on sunken rocks and trees, which compelled us to put ashore to repair the damage." This was in *ascending* the river in one trip.

4th. It is incorrect to say that the river is navigable for merchant ships, of any size, the year round, 180 miles, to the first rapids. Ross Cox, in 1818, says not. The Edinburgh Review, [1846,] the facts of which are derived from the Bay Company, states that ships of only fourteen feet depth of keel, ascend to Fort Vancouver. There is no

---

a Lewis and Clark and others.

authority, whatever, for asserting it to be navigable for the largest ships. Moreover, in spite of all which has been said and written, respecting the entrance of the mouth of the river, we must believe the most recent evidence adduced by Lieut Maury: [*a*] "That Lieut. Howison was wrecked at the mouth of that river, two years ago, in the U. S. schooner Shark. She went to pieces at a place on the bar, where, but a few years ago, the Exploring Expedition found water enough to float a seventy-four; that he then chartered a small vessel, and was detained sixty-three days in the mouth of the river, by the bar, although the vessel drew but eight feet water; and that the character of that harbor has entirely changed since Capt. Wilkes surveyed it." This amply proves that the shifting and changing of the bars, (for which there can be no remedy,) renders this harbor altogether unreliable.

5th. At the first rapid, or "the cascades," a portage of three miles must be made, and then the navigation is tolerable 60 miles, to the *Dalles*. As to the assertion that the falls "are only 37 feet 8 inches, and easily passed by a portage of 1,200 yards," we will premise that, in high water, the falls are buried by the back water from the Dalles, or narrows, which are impassable; and that, in low water, the whole distance from the head of the falls to the foot of the Dalles, is ten miles, the whole distance impassable for canoes, at any time. Cox says: "The Columbia, at the narrows, for upwards of three miles, is compressed into a narrow channel, not exceeding sixty or seventy yards wide; and, through this narrow channel, for upwards of half a mile, the immense waters of the Columbia are *one mass* of foam, and force their headlong course with a frightful impetuosity, which cannot, at any time, be contemplated without producing painful giddiness. We were obliged to carry all our lading from the lower to the upper narrows, nine miles. Again at the head of Great falls. The descent of the river from above this fall to the end of the lower narrows, *exceeds seventy feet;* and, throughout the whole distance, [ten miles,] the river is strewed with immense masses of hard, black rock, mostly honey-combed."

6th. It is not correct to say that the navigation is good from the Great Falls to the mouth of Clark's river. A number of rapids intervene, and also the Kettle falls, [16 feet.] [*b*]

7th. The land carriage, across the bend of Clark's river, has already been noticed.

8th. Probably correct; and finally,

9th. The distance from the north pass to the Pacific, descending Clark's river, is not known, but is probably near 1,000 miles. Whether vessels of 100 tons burthen would float between the Great falls and the Kettle falls, cannot possibly be known, as no sufficient examination of the river has been made; and the same is the fact as respects Clark's river. It is well known that the fur traders *never ascend the rivers in high water*, because the current is too strong, and *never descend in low water*, because the rapids are too dangerous; and

---

a Western Journal, May No. *b* Pilcher and DeSmedt.

that they never use any craft but light batteaux. [*a*] The facts collected in this essay, sufficiently evidence that boats of one ton burthen could not ascend in low water, because such boats cannot be transported around portages. In high water what are the difficulties?

If we only knew positively the altitude of the mouth of Clark's river, and at one or two points above on the same stream, the possibility of navigating these streams by steam could be demonstrated beyond cavil. Lewis and Clark had no barometer, and Fremont's was broken some days previous to his arrival at Walla-Walla.

It is a well known fact, that steamboats on our western waters, have engines adapted to overcome a certain descent of water; that to overcome a greater descent, a greater weight, as well as power, of engine is requisite; that this increase of steam power diminishes the capacity of the boat for burthen; and that there is a rate of descent which *no engine* can be made to overcome. The writer is informed by competent engineers, that our western boats are usually adapted to ascend a stream with a cargo, which descends at the rate of twelve to fifteen inches per mile; and that *without a cargo*, very few of them could ascend a stream descending at the rate of two feet to the mile. The descent of the Missouri from the Council Bluffs, is within a minute fraction of one foot per mile, (*b*) but such is the pressure of the upper portion of its waters during the freshet, that in narrow places, on the lower portion, the best boats cannot ascend without the use of cables. Now, the waters of the Columbia have their sources at the same elevation with those of the Missouri; and according to the advocates of steam navigation upon them, the distance from the North Pass down Clark's river to the Pacific, is only one thousand miles, whilst the distance from the great falls of the Missouri, a point lower than the proposed head of navigation on the Clark—to its mouth, is two thousand five hundred and eighty miles; and consequently, the descent of the western waters must be more than two and a half feet, where that of the Missouri is one foot. Can such a current be stemmed by steamboats? (*c*)

Again: The altitude of Lewis river at Fort Hall is 4,500 feet; and at the foot of Fishing Falls, is 3,173 feet. [*d*] Now, the distance from the Fishing Falls of Lewis river to the ocean cannot be over 1,000 miles, and therefore, the descent of the river is, during the freshet, when the rapids are all buried, at the rate of three feet and two inches per mile; and this rate is accelerated by the pressure of its upper waters, which descend at a much greater rate. Only two questions remain: Are the Fishing Falls farther from the ocean than the proposed head of navigation on Clark's river? And is there any probability that a point so low down on Lewis river is more elevated than the vicinity of the North Pass?—especially when it is remembered that Lewis river [*e*] heads near the South Pass, (which is probably about as elevated as the North Pass,) and then descends more rapidly several hundred miles *to* the Fishing Falls than it does below that point?

---

a Cox and Ballantyne. *b* Nicollet. *c* Lewis and Clark. *d* Fremont. *e* Fremont.

The map will answer these questions. Finally, let the reader reflect that during a high freshet, although the impediments in the bed of a river are overcome, and its superficial current thus equalized, yet, where its banks are narrowed, its speed is accelerated precisely in proportion to the narrowness of the chasm; that the streams of Oregon flow through stupendous ranges of volcanic mountains, filled with narrow gorges, and crooked ravines, and that there must be many places where the current is overwhelming, and many others where, in their descent, no skill or power could save the boats from being dashed to pieces. [*a*]

4. *A sea voyage across the Pacific.*—This portion of the route is unexceptionable; and, in fact the North Pacific is equal to any part of the sea, and superior to most parts. Since the original plan of Col. Benton, this portion of it has been amazingly improved by the introduction of steam vessels.

We will now suppose what we have shown to be impossible that the whole plan could be carried out according to the conception of its author—would it then change the route to India?

A sea voyage to Canton from New York is about 18,000 miles of distance, and (by a large allowance,) will consume five months. The number of vessels which sailed in 1845 to the East Indies, from the United States was 367; their average tonnage was 352 tons; and the average number of sailors 23 to each. [*b*] The distance from New York to St. Louis, (commercial route,) is about 1400 miles; from St. Louis to the foot of the great falls of the Missouri, 2,590 miles; thence to Clark's river 167 miles; [*c*] thence to the land portage across the bend of Clark's river, about 400 miles; thence across to Fort Colville 60 miles; [*d*] thence to the mouth of the Columbia, 613 miles; [*e*] and thence across the Pacific to Shanghae, about 5,500 miles; [*f*] making an entire distance of 10,730 miles, and being nearer than the sea voyage by 7,270 miles. The time consumed in making one trip from Shanghae to New York, when the waters are high, (and the trip cannot be made at any other time,) according to Col. Benton's plan, will be, from Shanghae to the mouth of the Columbia, in steam ships, 26 days; from the mouth of the river to the great falls, in steamboat, two days; thence ten mile portage, one day; thence to the Kettle falls, in steamboat, five days; thence across to Clark's river, three days, on horses; thence up the same, in 20 ton keels, twenty days; thence to the great falls of the Missouri, in six days, by wagons; thence down the Missouri to St. Louis, in steamboats, in ten days; and thence to New York in steamboats and railroads, in twenty days—whole time consumed ninety-three days. The amount of stock and number of persons necessary to be employed to bring into New York 350 tons, as much as one single vessel by the present route, will be: One steam ship, 352 tons, to mouth of the Columbia, with 25 hands; one steam boat to the falls, of 352 tons, and 25 men; men and stock for ten miles portage; three steamboats of 100 tons, and one of 52 tons, between the Great Falls and the Kettle Falls; 3,520 mules, with drivers,

a Cox: and hence the Canadian word *Dalles*. *b* Appendix to Breese's Report. *c* Lewis and Clark. *d* Pilcher. *e* Lewis and Clark. *f* Maury.

to carry the goods sixty miles, in three days, to Clark's river; eighteen keels of twenty tons, with seventy-two men, to cordelle them up to North Pass; 352 wagons, with same number of drivers, and 1,408 horses to carry the goods to the Great Falls of the Missouri, (or if not, a railroad must be constructed;) six steamboats to carry them to St. Louis; one steamboat to carry them to Pittsburgh, and thence by railway, &c. to New York.

It is not possible to make more than one trip in twelve months, because of low water, &c. Now, is it needful that with these facts, further argument should be resorted to? Besides, a trip up and down the Missouri, in one season, would be very difficult, and upon the Columbia impossible; and one ship at sea will last forty years, whilst on these rivers, boats will not last over four years. And if the number of small boats, horses, and wagons are reduced in the foregoing calculation, this will involve a larger consumption of time than is now occupied in the sea voyage. With all which is enumerated, ninety-three days must be consumed to bring 352 tons to New York. Moreover, unless all the facilities are used promptly, the cargo which ascends the Columbia cannot be brought to the Missouri in time to catch the freshet, [a] (for both rivers rise together,) and must, therefore, be detained over a year, *i. e.* seven months longer than the sea voyage; and a cargo taken up the Missouri, never could reach the Columbia until after the freshet of that river had entirely subsided, because it never remains up as long as it will require to ascend the Missouri in steamboats.

For all which reasons, and many more, this route cannot be preferable to the present, either in safety, cheapness of transportation, or in substituting an exchange of commodities for a trade in gold and silver.

Upon a review of the foregoing article, it is believed that it has been proved incontrovertibly, that the navigation of the Missouri is impracticable to the falls, except for two months in the year; that it is at all times difficult, uncertain, expensive, and hazardous; that no land carriage short of a railroad across the mountains could, under any circumstances, be of service in a trip to China; that the Columbia cannot be navigated save with light and portable batteaux, during low water; that in high water, no steamboat *can be constructed* which would stem the current; that the land carriage across the bend of Clark's river is not susceptible of being converted into a rail or wagon way; that the harbor at the mouth of the Columbia cannot be entered by large vessels, and is, moreover, of a changeful, dangerous, and wholly unreliable character; and that if the Columbia could be navigated with certainty, the new route could not possibly rival the one at present in use.

It has been deemed proper to treat this question of a new route to India, by way of the Missouri and Columbia, in considerable detail, because of the very eminent source from whom it originated.

In a succeeding article, the practicability of a railway to the Pacific will be considered.

---

a It is even more probable that a trip up the Columbia could not be made at all in one season.

ART. III.—THE RISE, PROGRESS AND INFLUENCE OF THE FINE ARTS.

BY ALFRED S. WAUGH, ESQ.

PAINTING.

From the perishable nature of the materials on which pictures are generally made, we have no very ancient specimens, by which we could be enabled to trace its rise and progress; consequently, its early history is shrouded in obscurity, and nothing remains to prove its actual condition, beyond the records of the past, or the acknowledged license of the bards of antiquity. From the paintings on the interior of the tombs of the Theban kings, it is very perceptible, however, that its progress was far behind that of sculpture;* and, in the ruins of Pompeii, the frescoes are far inferior to the works of the chisel, to be met with in the same city. We have many records of early Grecian painters, in the works of the classic authors: but, alas! the bright emanation of their pencils have long since perished.

What we term the old masters, are in comparison with the sculptors of antiquity, as but men of yesterday. It is but a few hundred years since the use of oil, as a medium, was first adopted;† since then the art of painting has attained great perfection, and now takes precedence of all her sisters. It is capable of doing that which cannot be achieved by sculpture. With the pencil, "the baseless fabric of a vision" can be made to flit before the wondering gaze, and clouds, and vapor, and light, and color of the most subtle texture, to throw a reality o'er the canvass, rich in the ever varying hues of infinite nature. It is capable of conveying an idea of infinity, and of carrying perspective into the regions of unmeasured space, as may be seen in

*Note.—These paintings are supposed, by the Egyptian Savans, to have been executed during the reign of Sesostris, a monarch remarkable for his patronage of Art, who lived seven hundred years before the christian era. The walls of these tombs are decorated with a vast number of hireoglyphics, still glowing in all the freshness of new productions and exhibiting in the designs and combinations of their groups, some slight knowledge of composition which render them deeply interesting to the artistic historian.

† *Note.*—Of this wonderful discovery it is related that John Van Eyck, a distinguished artist at Bruges, having finished a picture with great care, placed it in the heat of the sun to dry; when the board upon which it was painted, split. Mortified at seeing the fruit of so much labor destroyed, he determined to attempt to discover, by the aid of chemistry, some process by which he might in future avoid so distressing an accident In this research he is said to have discovered the use of linseed oil, which he found the most siccative; and it was for some time generally believed that it was to this circumstance that the art was indebted for the discovery of oil painting in the year 1410.—[*Painting, its Rise and Progress, from the Earliest Ages to the Present Time.* Compiled from the best authorities. Boston: published by John P. Jewett & Co. 1846.

the works of Martin and Danby, artists, whose genius have carried the art to as great an extent, if not greater, than any other with whose productions we are familiar. In the Belshazzer's Feast of Martin, the perspective, I might almost say, is interminable; and the multitude of human beings, and other objects introduced, impress the beholder with a degree of awe that belongs to no other painting, either ancient or modern, which I have ever seen. The main figure, that of the prophet Daniel, stands erect, inspired with all the commanding majesty which his divine commission gives him. The revelling king, in the midst of his lordly courtiers, has shrunk from his throne, with dread terror at the luminous handwriting on the wall, and is humbly soliciting the wise man of God to interpret its meaning; consternation is depicted on the countenances of the vast multitude who surround him, and the innumerable lamps of the regal palace have waxed pale, before the refulgence of this mysterious and unearthly light, which, in its intensity, causes all others to fade beneath its terrific splendor; and from this source alone, is the entire picture lighted.

In this single production of the pencil on a flat surface, we see a power of optical illusion, of greater magnitude than any which can possibly come from the chisel. Its mastery over color and chiaroscuro, irresistably chains the attention; and, by sweetly deceiving the eye with its magic charms, wins, alike, the civilized and savage to its shrine, and claims homage from all ranks and conditions of men.

When we look upon the landscapes of Claude—that sweet poet of the pencil—we feel all the pleasure which the contemplation of reality would give. In his sunrise views, we actually feel "the wild freshness of morning;" and, in his sunsets, all the balmy sweetness of declining day, we inhale the fragrance of flower enamelled fields, bask in the clear light of the summer's day, enjoy the cool shade of sylvan retreats, or are refreshed by the breeze which has kissed the calm surface of a lake, clear and pure as the element itself. The trees glow in the warm smiles of the departing god, and the streams glide on in pelucid tranquility. His was the pencil of inspiration, and his touch was truth.‡

‡ *Note.*—For thirty years his innate powers lay slumbering, until circumstances roused the divinity within him and called them forth to be the wonder and admiration of succeeding generations. This inimitable painter was born at Lorraine in 1600, and labored in the same humble calling with his father, which was that of a pastry cook. Remarkable only for inattention towards the simple pursuits of this very palatable art, he sorely annoyed his parent by his apparent stupidity, and at length was deprived of the shelter of a parental roof, turned loose upon the world to find a living as best he could. Hiring himself as valet to some young artists who were going into Italy, soon after his arrival at Rome he entered into the service of a landscape painter of no great fame, Agostino Tassi, whom he accompanied to the fields whenever his employer sketched from nature. Observing the progress of imitative art, a strong desire of learning its principles took possession of his breast, and in the temporary absence of his master, one day, made an attempt, and to his surprise and delight, found such ample encouragement in the success of his first effort, as induced him to occupy his leisure hours in untutored study. His employer, pleased with these evidences of superior genius, gave him great encouragement, in the hope of deriving assistance in his own great works, at some future day. In ten years from that time, Claude Gelee, the

When we contemplate the rapid developement of this man's genius, we may indeed exclaim

Painters are born, not made.

The two greatest painters among the old masters, are Michael Angelo and Raphael. Angelo was remarkable for the vastness of his conceptions, and the vigor of his execution. His mighty mind, disdaining the usual process of embodying his designs in clay, previous to executing them in stone, went boldly to work on the marble, without any other guide than the image already perfected in his own brain, with a certainty, indeed, of rendering the marble flexible before him.§

A great master of the anatomy of the human frame, he needed no other guide than the image thus clearly presented to the mind's eye. In the three great departments of art, he at once excelled; but was more devoted to sculpture than its sisters, painting and architecture. The productions of his chisel are more calculated to inspire awe, than to create pleasurable sensations. In all his designs you see magnitude, solidity, and strength; but little or no delicacy. His school belonged to the sublime.

Raphael, on the contrary, possessed of all his knowledge of the human figure, had a delicacy of feeling and sublimity of sentiment, both in conception and coloring, which threw a charm over whatever his immortal pencil touched, and drew from admiring crowds the acknowledgment of his well-earned title: the Prince of Painters.

The school of Rome, to which this great master belonged, had the advantage of possessing many of the richest treasures of Grecian art, either brought from Greece, or executed in Italy, by artists brought from that country. The study of these precious remains, no doubt, gave an exaltation and refinement to her students, which soon raised her to an enviable position in art, and entitled her to precedence of all others. The knowledge of design, beauty of form, and grandeur of style, with the simplicity of just expression, exhibited in the works of this school, stamped her productions with the seal of authority, which rendered them models of imitation to succeeding generations, and laid down rules, from which it is considered almost heretical to deviate materially.¶

---

poor outcast pastry cook, was known as Claude de Loraine, the most finished landscape painter that ever charmed the world with the witcheries of the pencil. He died in 1682, at the advanced age of eighty-two years, leaving behind him a great number of gems of art which are prized beyond all others in the same department, and are rarely to be found outside the walls of the most renowned galleries of Europe. His studies from nature are as perfect as genius can make them, but in many of his compositions, he frequently exhibits want of judgment in the introducrion of objects irrelevant to the subject, and totally inconsistent with the character of the scenes represented. His skies are possessed of a charm, surpassed only by those of nature, and his trees have a freshness and reality which have never been excelled by any other master.

§ *Note.*—"Before whom the marble was flexible."

¶ *Note.*—This school was devoted to the great principles of art, and paid no more attention to coloring than was positively necessary to draw the line of demarcation between Painting and Sculpture, or as a writer on art expresses it, "be-

"Painting, according to Vanmander, the historian of the Flemish artists, had been carried into Flanders about the time of Giotto, by some Flemings, who went for the express purpose of learning it; and he says that "the mode of painting, brought from Italy, was with gum and eggs, having been so practiced at Florence, at its first commencement, by Cimabue." It spread in practice among the Germans about the same time, and each of these countries established a mode of art, or style, for themselves. It was in Italy alone, however, that any true perception of what was the proper object of art, appears to have been felt, and there it was first exhibited; and, even there, it dates its principles from one city and its dependencies, viz: Florence. In this place, alone, it remained pure in its object, the delineation of character and expression, with selection of form, and simplicity, and unmixed purity of effect. A style of design which, pursuing the first impulse of the art, viz: the representation of events at their most impressive moments, leaves minor objects out of consideration, and aims solely at fulfilling its purposes in an intuitive manner, upon the mind of the observer. That style Giotto had founded; it was improved in effect by Masaccio, strengthened by Bartolomeo della Porta and Leonardo de Vinci, and finally perfected by Raphael and Michael Angelo.

"To this most important aim of the art, the introduction of oil in painting brought no efficient aid. What has been said of its benefits, applies only to the ornamental, or less important application of it. The objects of the grand style, viz: beauty of design, and purity of expression, the weakest materials are capable of presenting to the imagination; and, therefore, notwithstanding the brilliancy of color and effect, which was afforded by the use of oil, it was, in a great measure, disregarded by the Florentines; or, if employed by them, they carried into its practice the defective hues of fresco, to the exception of Leonardo de Vinci and Fra Bartolomeo della Porta, [born at Florence, in 1479,] who followed closely the line of coloring laid down by the former, his immediate predecessor. To him the art is indebted for the first conception of the union of true grandeur of style in design, with a suitable dignity and depth of coloring. The subjects he chose were generally of a religious kind, which nearly excluded naked figures; but he amply compensated for that, by the mode in which he composed his draperies, and arranged his groups. Of him, Raphael is supposed to have acquired more information than from any other source, till he had seen the works of Michael Angelo, in

---

tween painting varied with colors, and chairo-scuro," (i. e. *chairo*, light, and *oscuro*, dark.) It was not until the middle of the fifteenth century that this effect was at all understood. Very little of what we call projecting shadows was known among painters previous to this time; and prior to the appearance of Leonardo de Vinci, the painters were in the habit of placing their figures on grounds so extremely light, as to resemble drawings on white paper, deriving no relief from the aid of necessary shadows.

Raphael having gained great reputation while in Florence, was invited by Pope Julius II, to come to Rome and paint a suite of apartments in the Vatican, called the camere della segnatura, but better known at the present day, as the stanze or chambers of Raphael.

the Listmi Chapel. It was Bartolomeo who changed the taste he had imbibed from his master, Cietro Cerugino, and directed it in the course wherein he afterwards surpassed all that the modern art of painting had effected.

This delightful art, supported by an illustrious patronage, derived from its knowledge, ability, and the purposes of state, the increase of riches and of intellectual cultivation; but most materially from religion, now attained its second era of glorious success. A constellation of ingenious men, endowed with uncommon talents, appeared to spread its light once more through the world, and painting was perfected as far, perhaps, as human nature can carry it, in the works of Michael Angelo, Raphael, Titian, and Corregio.

Although no one of these four great men appear to have made the Grecian principle of select beauty a precise object of attention, yet, in those branches of the art which they more immediately cultivated, they must be considered as having attained the very highest rank.‖

In the last great work of Raphael, the Transfiguration, now in the Vatican in Rome, you behold all the essentials to inspire awe and pleasure; and, although this work was never completely finished, it remains in the same state he left it three hundred years ago, for no hand can be found daring enough to profane the canvass of the Prince of Painters.

At the early age of thirty-seven, this brightest gem in the diadem of art quitted the world; and, as his spirit was about to ascend to a holier sphere, he expressed a desire to rest his dying gaze on this, the last effort of his genius. So highly were his transcendent powers appreciated, that the sovereign Pontiff, attended by the Cardinals and other dignitaries of the Church, administered to him the last solemn rites of religion, and his soul ascended from earth to Heaven, amid the prayers and incense of the Catholic faith.

> Around were gathered earth's magnates. Mitres
> And coronets sparkl'd in the expiring
> Light of declining day. The keeper of
> The keys, knelt in meekness beside the couch
> Of him, whose spirit sprang from the Eternal.
> Religion lent itself to swell the grandeur
> Of devotion. Music and poetry
> Floated upward to the throne of Him who
> Reigns without a rival. Ministering angels
> Waited on the wing, to bear the emanation
> Of the divine spark to the source whence it
> Came, and the great ones of this world reverently
> Bow'd their gem encircled brows,
> And did homage to the majesty of intellect.

The death-bed scene of this potentate in art, forms a splendid subject for the pencil, and bears ample testimony of the homage paid to genius—the reverence of this world's aristocracy, to *the aristocracy of nature*—that high nobility, whose patents of creation are direct from the high court of Heaven itself.

Note. ‖ Rees' Cyclopædia, article on Painting.

ART. IV.—EDUCATION.

BY JOHN H. TICE, ESQ.

In the conclusion of our article in the November number of this Journal, we stated substantially, that few States had adopted any system of education, and fewer still had carried out what system they had adopted. We did not intend to insinuate that the subject of education was not a popular one—one that did not secure general attention, nor elicit general sympathy; for we know that the contrary is the fact. But we intended to warn our readers against the common and fatal error, that to secure the blessings of the common school system to a community, it is only necessary to adopt some elaborate system—some splendid machinery—and that all that is desirable will follow. This is a grievous and fatal delusion, proven to be such by sad experience, in many of our States. The school systems of many States are as good as those of New York and Massachusetts, and their means far more abundant; yet where are any States that can be compared to them? Nay, more, it is only within the last ten or twelve years that the pre-eminence is due to New York and Massachusetts. Why is this so? Anterior to that period they had their school systems, but in nothing remarkable were they distinguishable from the rest of the States that had systems. Moreover, their present proud position is not owing so much to any extraordinary innovations on, as to the infusion of life into, the old system, and bringing out its contemplated results. Innovations, to be sure, were made, but more with reference to developing the old system, than to give it any new principles. To realize what was contemplated by the old system, additional means as auxiliaries were required. Such, for instance, as "Normal schools" and "teachers' institutes." These were necessary addenda. A supply of professional and qualified teachers was necessary to make the system succeed; to employ persons who casually may be thrown out of other employments, or who, for want of energy or ability, have failed in every thing else that they have undertaken, is a misappropriation of moneys, for the expenditure of which the community does not receive an equivalent; and not receiving the "*quid pro quo*," are unwilling to bear the burthen of taxation necessary to sustain the school system. However faultless that system may be in its details, if the means are lacking to put it into efficient and vigorous operation, it will never secure in its favor public opinion and affection; and it must and will fall. But to supply the public schools with professional teachers, such as have studied the art of teaching as thoroughly, and become as familiar with its details as physicians are supposed to be with the properties of medicine and human physiology, attorneys with law, and clergymen with divinity, some means must be devised

for their training and education. Hence, the establishment of Normal schools and teachers' institutes. These, furnishing teachers of superior acquirements and skill, who, making the common schools what they should be, make them popular; and being good, and consequently popular, the means for their support are cheerfully furnished. Thus the benefits of the system, by using the proper appliances, are realized, and the common schools, as the cheapest and best, supplant all others—carry knowledge to every door, however humble—and spread their beneficent influence on morals and intelligence throughout the borders of the State.

Another fatal error in regard to a system of education is, to commit its care and execution to some cabinet, or other officer, who is already overcharged by law with duties. Many of these officers, perhaps, feel no interest whatever in the matter; or if they do their other duties, render it impossible to give the subject that attention and examination, in detail, that is necessary to discover and supply its defects—or if perfect, to put it into successful operation. We are aware that this is done under the plea of economy, but that it is most wretched economy, is evidenced by the result of the school system in every State where it obtains. The successful administration of a school system is entirely too vast and intricate to be confided to an officer who has already his hands full.

The school fund has not only to be taken care of, but its increase, productiveness, and proper expenditure has to be cared for. But its proper application alone would be sufficient to require the entire attention of one officer. Before he is qualified to recommend any plans for, or improvements in, the schools, he ought to be familiar with all the systems of education, mode of administration, and improvements in schools elsewhere. While we would not entirely discard experiments, we think it altogether wiser and safer to avail ourselves of the results of the experiments of others; especially when others have made almost every variety of them, and under more favorable auspices than we possibly could. Some of these experiments have turned out entire failures, but others have been as eminently successful. The successful ones, (of which we may avail ourselves gratis,) offer us a sufficient basis to commence operations on. If we bring up our schools to the standard of the best schools in the Union, and exhaust the improvements made elsewhere, then it will be time enough for us to think of experiments. But in the beginning, the best system of, and all the recent valuable improvements in, education ought to be adopted. This would, perhaps, suffice us, and be all that we should aim to attain for one generation.

Thus it will be seen that a vast field is open for the exploration of the officer who may be charged with the duties of superintendent of the school fund. Entirely too vast for an officer who has not all his time for the purpose, and whose heart is not in the work. For, depend upon it, the last qualification is indispensable to make an efficient superintendent of public instruction. He should feel that the collection of statistics, facts, and looking after, and taking care of, the funds constitute but a moiety of his duties. Imbued with the importance of

the subject committed to his hands, he should feel it his duty to impress that importance upon the minds of the community, and excite public attention, and enlist public favor in its behalf. Nothing can be accomplished until the public mind has been prepared for it; hence every thing that is necessary to be done to prepare the way, necessarily will come within the scope of such officers' duties, and he must perform it, if he wishes to perform his duties faithfully, or become a public benefactor. He will have to do, what is very expressively called by politicians, "keep it before the people;" and for this purpose he must avail himself of every means of access to the public mind. The press, the pulpit, the forum, the stump, and the lecture-room, must all be employed and enlisted in the cause, until those of the community who will not yield from a sense of duty, will, like the man in the parable, being wearied with importunity, give what is asked.

We, on a former occasion, promised to give a synopsis of the school systems of the several States; but upon examination, we find that this would swell our article beyond all bounds, and not give us room for our *projét*. We will, therefore, content ourselves with merely stating such facts as are necessary to understand and enforce what we have to say.

Upon the subject of having a responsible head to the common school system in each State, there seems to be a unanimity of opinion. But the legislative provisions of the different States as respects the constitution of that head, are various and contradictory. While, therefore, the legislation of the States does not settle the best form of organization, we must look at the organization and constitution of that school system in those States, wherein its success has been least equivocal, and produced the most marked and brilliant results. To show what the legislation has been, the following States have assigned a distinct officer and separate department to their common school system, viz:

Maine and Massachusetts have each established a Board of Education, with a secretary of the board. The secretary performs the duties imposed upon the superintendent of common schools in other States, and is paid a regular salary from the State treasury—the former $1,000 and the latter $1,500. New Hampshire, School Commissioner. Rhode Island, Commissioner of Public Schools. Connecticut, Commissioner of the School Fund and Superintendent of Public Schools. New York, the Secretary of State is ex-officio Superintendent of Common Schools, with a Deputy Superintendent, who has charge of the common school department. New Jersey, Louisiana, Tennessee, Michigan, Wisconsin, Iowa, and Kentucky, Superintendents of Common Schools, or of Public Instruction. Pennsylvania, Ohio, Illinois, Missouri and Mississippi, Secretary of State ex-officio Superintendent of Common Schools, or of School Fund. Vermont, Governor ex-officio Superintendent of Common Schools. Virginia, Auditor ex-officio Superintendent of Literary Fund. With the provisions of the recent laws of Delaware, Maryland and Indiana, we are unacquainted. South Carolina, Commissioners of Free Schools, appointed by the legislature. North Carolina, Georgia, Florida, Ala-

bama and Texas, have, as far as we know, either no system, or have not yet organized any. Texas, however, in her constitution, provides a fund for free schools.

The following States have established the free system: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, South Carolina, Mississippi, Louisiana, Michigan, Wisconsin and Iowa. The rating system obtains in New York, Pennsylvania, Ohio, Illinois, and Missouri. In the month of August last, the vote for imposing a tax to establish free schools was taken in Kentucky and Indiana. The political papers have informed us that one of these States was carried by the Whigs, and the other by the Democrats; and the journals of the respective parties have, upon such success, congratulated their friends with assurances that the Republic was safe—but have never given any information of what has been the fate of the free school question. The Republic is only safe, when there is a general diffusion of knowledge among all classes. If the Republic totter, the temporary success of either party will not save it. It must rest on a broader, firmer, and more permanent foundation—the virtue, integrity, and intelligence of the people. Where these are wanting, or where the means of producing them are lacking, the Republic is not safe, let the reins of government be in whose hands they may.

Virginia, North Carolina and Georgia, adhere to the indigent system; the former two pay for the education of poor children, from their literary fund, the latter out of the State Treasury.

The following are the amounts expended by the several States, during the year 1847:

Maine—State fund,	$27,589 35
Raised by taxation, (estimated,)	240,000 00
New Hampshire—State fund,	9,449 22
Raised by taxation	138,333 60
Vermont—State fund,	2,888 37
Raised by taxation,	71,177 27
Massachusetts—State fund and Normal schools,	9,757 56
Raised by towns,	696,488 75
Rhode Island—State fund, annual appropriation,	25,000 00
Raised by taxation, estimated,	54,000 00
Connecticut—State fund,	126,126 80
No report of amount raised by taxation.	
New York—Annual appropriation State fund,	220,000 00
Raised by taxation,	220,000 00
Received on rate bills,	462,840 44
Proceeds of local funds,	156,974 20
New Jersey—State fund, annual appropriation,	30,000 00
Raised by taxation,	80,850 53
Pennsylvania—State appropriation,	196,804 04
Raised by taxation,	436,727 80
Delaware—State fund,	45,239 74
Taxation,	15,901 82

Maryland—State fund, - - - - - - - - $34,069 26
Taxation, no returns, except city of Baltimore, 41,200 00
Virginia—Literary fund paid for the education of the poor, 68,140 05
North Carolina—Income of Literary fund. No expenditure stated, - - - - - 20,824 78
South Carolina—Paid by State for free schools, - 33,527 52
Taxation, no returns.
Georgia—Tuition of poor children, - - - - - 7,692 37
Florida—No account of any expenditure.
Alabama—No account of expenditure. School fund invested in Bank stock, $1,015,856 00; annual income estimated at $98,000. Not realized, in consequence of insolvency of Banks.
Mississippi—No returns. Funds esiimated at $1,000,000, consisting principally of unsold lands. Free school law passed March 4th, 1846. Appropriates all fines, forfeitures, and receipts from every kind of licenses, to State school fund. In addition to which, the officers of each township are authorized to levy a tax, not to exceed State tax, for support of schools in each township.
Louisiana—State fund, - - - - - - 5,456 96
Raised by taxation in 37 parishes, - - 251,443 67
Estimate of amount raised in 12 remaining parishes, not heard from at date of Superintendent's Report, - - 48,334 00

The School law of this State was passed May 3d, 1847, and the schools were put in operation first Monday in December, 1848, except in the city of New Orleans.

Texas—State fund, - - - - - - - - - 7,710 58
Taxation, no returns.

By provision of the Constitution, one-tenth of the annual revenue of the State is set apart for a permanent fund, for the support of "free public schools." And no school lands shall be alienable in fee, nor leased for more than twenty years.

Arkansas—We have no authentic information.
Tennessee—State fund apportioned in July, 1848, - - 114,227 18
No returns of amount raised otherwise.
Kentucky—No authentic returns. New school law recently adopted.
Ohio—State fund, - - - - - - - - - 127,117 69
Half-mill State tax for schools, - - - 74,201 82
Raised through other sources, - - - 164,223 68
Michigan—State fund in May, 1847, - - - - 31,274 00
Taxation, (incomplete,) - - - - - 14,000 00
Indiana—Principal of School fund is $2,195,149 59.
Held by the several counties income from same, estimated at - - - - - - - - 120,000 00

This State has recently, we believe, adopted the free system.

Illinois—No State fund; returns imperfect. Of 99 counties in the State, but 57 reported to Secretary of State in 1847. These do not report the productiveness of their respective funds, the aggregate capital of which is $551,780, which at six per cent. would be, say - - - - - - 33,000 00
Only 21 of these counties report as having collected school tax under the provisions of the 84th section of school law. The aggregate amount collected is, - - - - - - 8,763 00
Of which Cook county collected more than one-half, viz: - - - - - - - - - 5,204 00
Missouri.—State School Fund apportionment of 1847, 23,720 02
Amount received on rate bills, and from township and county school funds not stated.

The State School Fund amounts to $575,000, invested in State Bank stock, of which $515,518 83 was invested in July, 1839; the balance in 1840 and 1842, which yielded, in dividends, to November 16th, 1846, $110,000. Whereas, at legal interest, it would, at the lowest calculation, have yielded $300,000.

The amount of the principal of the fund consists principally of the amount received from the United States, under the "Deposite Act." Saline lands, belonging to the State, also constitute a part of the fund, but we are without any data to show their extent or value.

The apportionment for 1847 was forty cents per capita of persons of educable age. The amount of apportionment of 1846 was fifty-eight cents per head.

Iowa.—This State has a General Superintendent, Thomas H. Benton, jr. Its school funds consist of the usual congressional bounties, in lands and funds. The State law donates all escheated estates, all military fees, fines before courts and forfeitures to school purposes. We have no returns of expenditures.

Wisconsin has a State Superintendent. Liberal provision has been made, both by constitution and law, for a school fund to be devoted to common schools, academies, and Normal schools; but amount not to exceed twice the amount raised by tax. The fund constituted of similar items as in Iowa.

The statistics embraced in the above enumeration, show that the expenditure is always in proportion to the density of the population, establishing beyond question, the necessity of adopting a common school system at places where there is a large concentration of human beings. That it has been deemed expedient in all cities to make ample provision for the education of all classes, the facts abundantly prove. But the reasons of these provisions are not so plain. No doubt they are the offspring primarily of the benevolent and philanthropic feelings of a few; but that whole communities should yield so readily to their establishment, and at such an expenditure of money, must be owing to the fact of the general opinion in the community of their absolute necessity, as nurseries of morality, training the coming generation to habits of virtue, and by diffusing knowledge, preparing

it for future honor and usefulness. The several cities in the Union have, during the year 1847, expended the following amounts:

Boston, -	$232,772 37	Baltimore, -	$67,054 08
New York, -	172,262 59	Cincinnati, -	48,885 03
Philadelphia in '45,	227,205 42	New Orleans, -	116,104 00
		St. Louis, -	12,565 06

Having now accomplished the two objects we proposed, viz: To show that there is general interest felt throughout the Union on the subject of education, and the provisions and expenditures for that purpose in the several States, we must proceed to our main object, viz: Present our *projét* for the organization and support of common schools in Missouri. We regret that our limits did not permit us to give an analysis of every State school system in the Union, in order that what we have to say might be better appreciated by our readers. We have, however, said enough to convince all of the necessity of speedy legislative provisions in the premises, that an efficient system ought to be adopted and put in operation.

The first consideration in projecting a system, is the means to put it in operation, and sustain it when established. We would make the State School Fund the basis and centre of operations. But we have seen above, that in consequence of its injudicious investment, its productiveness is too insignificant to effect much by that means. There are but two ways to increase its productiveness, viz: 1st, to withdraw it from its present investment in bank; or, 2d, for the State to guarantee six per centum per annum upon the capital. We are not familiar enough with the condition of our banks to know whether it would be prudent to withdraw it, nor are we able to say whether the State has a legal right to do so, if disposed. As at present advised, we favor the project of the State guaranteeing six per centum upon the amount of investment. The bank now declares about three and a half per centum per annum. This would leave two and a half per centum to be made up by the State, or about $14,375.

To increase the capital of the State fund, we would recommend to appropriate the proceeds of the five hundred thousand acres of land to the school fund, and to loan the proceeds thereof to the State, to pay off her other debts, at an annual interest of six per cent. The capital thus added to the school fund, would increase that fund at the congressional price of land per acre, $625,000, and would yield an annual revenue, together with that invested in bank stock, of $72,000. To this add the amount that would be derived from Saline lands, lands escheated to the State, lands purchased or forfeited for taxes, as provided for by existing school law. As we are without data of the value of these, we estimate their annual productiveness at $3,000, which, added to the above, will make the sum of $75,000 for annual distribution.

We would then have, as a basis to commence operations, the sum of $75,000. The distribution of this fund ought to be made to depend upon certain conditions. These conditions, among others, ought to consist of the following, viz: That no city, town, village, township or district, shall be entitled to any share in the apportionment, which has

not transmitted, through the proper officer, to the superintendent of common schools, an official document, showing, amongst other things, the number of persons of educable age within the limits of such city, town, village, township, or district—that a school or schools have been organized and kept within their limits during the year, for at least the space of three months—the number of schools, and the number of pupils taught, &c., and that there has been a tax assessed, collected, and expended for tuition, within said city, town, village, &c., as aforesaid, of a sum not less than the preceding annual apportionment per head for the number of persons of educable age, within such city, town, &c. Should a school law pass with this provision, it would give, added to the State fund, a sum of $150,000, to be expended annually for education in the State. In the State of New York, the law requires this, as a pre-requisite, to be entitled to a portion of the State apportionment. In Massachusetts, the law requires that every town, &c., shall have assessed and collected, for educational purposes, the amount of $1 25 per head for the number of persons of educable age, to entitle them to a share in the apportionment. The same provision is engrafted on the school laws of various other States, and has been one of the most efficient means of putting the school system in operation, and most salutary to sustain and maintain the schools, when once established; because their management, government, &c., are made, by this means, a matter of personal interest to every tax payer.

The next consideration is, the value and productiveness of the sixteenth sections, and other lands donated by Congress for school purposes. We have no date, either to show the value or productiveness of these. We estimate their present value at $2,000,000; those in the city of St. Louis, alone, being worth $250,000. These ought to yield a further sum of $120,000, as a township school fund. Fines, penalties, forfeitures, &c., constituting the county school fund, we estimate at $5,000. The means to put in operation and sustain a common school system, in Missouri, would then be as follows:

State school fund, (as proposed,)	$75,000
An equal amount of School tax levied,	75,000
Township School fund,	120,000
County School fund,	5,000
Total,	$275,000

The last report of the superintendent of common schools, shows that the whole of the last apportionment of the State school funds was made to fifty-two counties, leaving almost one-half the counties without any appropriation. The fifty-two counties report a population of educable age, a fraction less than 40,000. To which 20,000 must be added for the city of St. Louis, and perhaps 30,000 more for the balance of the State, from which there were no returns. This estimate would make the educable population of the State about 90,000. This estimate, from the ratio it bears to the population of the State, is too low. But, as a large portion of the educable youth are attending private schools and seminaries, we suppose that the number who would attend the public schools, and for whom provisions should be made,

will not much, if at all, exceed the estimate, viz: 90,000. Assuming, then, 90,000 as the number to be provided for and $275,000 as the means to educate them, this will give the sum of $3 plus, per head. In Massachusetts, the amount is $3 40 per head; and the amount for the annual average of those who attend school, is $5 75. Assuming, then, the Massachusetts average, the means will be ample to educate 48,000 pupils.

In the city of Boston, the cost for tuition per annum, in the public schools, per scholar, is - - - - -	$11 00
In the public schools of St. Louis, it is - - -	8 00

This would show that education is cheaper in Missouri than Massachusetts. If so, then the difference is in favor of our estimate.

But the people of Missouri will not furnish the means, unless they be properly and beneficially expended. Look over the reports of the superintendents of common schools in either the south or west, and the greatest drawback to the establishment of common schools is the want of competent and qualified teachers. If these could be had, there would be no difficulty of establishing common schools, nor a lack of means to support them. It cannot be expected that any community will tax itself to raise money, the expenditure of which produces no visible good. It is necessary that the schools should have the public confidence, to meet with public favor. But they can have neither, unless they are taught by competent and systematic teachers. But the requisite number of teachers, thus qualified, cannot be had in the west. To some extent, there may be an aversion among western people to take up teaching as a profession. But, the principal cause is, there are no institutions in the west, where teaching is taught as an art, in which a professional knowledge of it can be obtained. The consequence is, either we must employ those who have enjoyed but limited means of education, or who have educated themselves, or we must wait for the slow process of immigration from the east of teachers to fill our schools, or we must erect seminaries of our own, to educate our teachers. If we employ the first, our progress in establishing schools will be slow and difficult, and not amount to much when done. If we look for a supply of teachers by immigration, we can rarely expect to receive any but second and third rate teachers, who have been unable to succeed elsewhere. There will, to be sure, be some exceptions to this rule, but they will be too few and far between to rely upon for the purposes of building up and sustaining a popular and efficient system of common schools in the west.

Ask those who have devoted their time and talents to the cause of popular education in any of the Western States, what is the greatest obstacle to their success, and they will answer you—the want of competent teachers. Ask the commissioners of any school district why there is so much apathy and indifference on this subject in their respective districts, and why their schools languish for want of support, and you receive tne same answer. Ask the State superintendent why the school law remains a dead letter upon the statute book—why the people are so reluctant to avail themselves and their children of its blessings—and they likewise tell you that it is impossible to carry it

into effect until some measure is devised to supply our schools with such teachers as will bring the schools into public favor. So general is this complaint, and so blighting is it in its effects, that it has rendered abortive every humane and philanthropic effort to establish any public school system in the west. If we say not the truth, believe us not. The Hon. Thompson Campbell, superintendent of the common schools of Illinois, in his report to the last legislature of that State, makes the following judicious remarks upon this subject:

"There is no department in the common school system where more responsibility devolves, or upon which the final success of the scheme depends, than is confided to teachers. The end and aim of the whole law converges to this point. The great good, and incalculable benefits which the law is intended to confer upon the rising generation, are dependant upon them for their development and practical application. They are the medium through which the light of education penetrates the clouds of ignorance that cluster around and obscure the uninformed mind.

"Many of our sister States impressed with the importance of employing none but the ablest and most competent teachers, have established institutions intended expressly for their education. These seminaries for the preparation of young men and women for the arduous profession of teaching, have been attended with the most flattering and encouraging results.

"The want of competent teachers has been an evil loudly complained of, and difficult to remedy. The policy of establishing and maintaining Normal schools, for the education of teachers, was first brought before the people of New England in 1824, and like all works of progress, reformation and improvement, it experienced its full share of opposition; which, however, gradually yielded to, and was gradually shamed out of existence by the marked change in the improved condition of the schools, and the elevated character of the teachers. Normal schools, for the education of teachers, are now considered as almost indispensable auxiliaries to the system of common school education."

The Hon. Falkland H. Martin, superintendent of common schools of Missouri, in his report to the last legislature, urges the same subject upon the consideration of the legislators of Missouri. The following is his language:

"I cannot refrain from again introducing to the notice of the General Assembly, the prevalent opinion, that a school for the education of young men to be employed hereafter as teachers, would be of almost incalculable benefit to our common school system. Several of our sister States have adopted the plan, and derive great and essential benefits from it."

In the report of the Committee on Education of the State Senate, made to that body on the 25th day of January, 1847, by the Hon. W. Claude Jones, chairman, we find the following strong language upon the same point:

"One great difficulty in the way of reducing our common school system to successful operation, and experiencing the full benefits to be derived from it, is the want of competent teachers. This want is sensibly felt in our State, and the attention of the legislature has been called to it time after time by the superintendent of the common schools and the executive; but nothing has yet been done on the subject. The necessity of competent teachers becomes more apparent every day. The demand is increasing rapidly, and we have no means by which we can supply that demand, by those who are competent to discharge the duties of common school teachers. Hence originates the necessity of some public institution, by which teachers can be educated for the State."

The joint committee to visit the State University, through their chairman, Hon. James S. Rollins, in behalf of the committee of the Senate, and Hon. W. P. Johnson, of the committee in behalf of the House, in their report made to the last legislature of Missouri, submitted January 16th, 1847, the same subject is brought to the notice of the legislature, and concludes by recommending an additional professorship in connection with the University, to be devoted to the "*Theory and Practice of Teaching.*" The following is the language of the committee:

"It is known to almost every one who has given any attention to the subject, that one principal reason why our system of common schools has not been more successful and more generally adopted, and its advantages more extensively felt and realized throughout the State, has been the difficulty of procuring well qualified *school masters.*

"And it is probable that this severe drawback upon the advancement of education will long continue, unless the State comes forward and lends her aid in remedying this great defect in our system. The truth is, the efficiency of any plan which may be devised to aid in the education of the mind of the country, must at last depend upon those who are to carry it out, to execute it, and keep it in successful operation; and just so long as any considerable portion of the common school teachers throughout the State remain untaught, or half educated themselves, just so long we need not expect any great and lasting benefits to be derived from any system, however perfect, which may from time to time be adopted."

We might continue quotations almost *ad infinitum*, to the same effect, from documents emanating annually from the Executive and Legislative Departments, for the last ten or twelve years. Gov. Edwards has repeatedly called the attention of the Legislature to this subject, and submitted a plan to the last Legislature, for the organization and maintainance of a school for the educatien of teachers. The present Governor, Hon. A. King, as early as 1836, in the State Senate, endeavored to have a department in the State University allotted for the express purpose of educating common school teachers. The quotations we have made, and those to which we have adverted, we deem sufficient for our purpose. They establish the absolute necessity

of an institution for the purposes designated—demanded alike by the wants of the country, and the welfare of those who are about entering upon the stage, to act their part in the great drama of human life, either for weal or woe, and whose good or bad influences will be felt long after they will have passed from the stage of existence.

We do not know that it is necessary to add anything more, to produce the conviction that the measure proposed is of absolute necessity, in order to secure a speedy action in the premises. But we cannot refrain from quoting an extract from the report of Col. Young, as superintendent of common schools of the State of New York, made to the Legislature of that State, in 1844. The views expressed are creditable to their author, who is one of the most enlightened statesmen of the age, distinguished alike for his sagacity and practical wisdom as a legislator. We commend his views to the calm and earnest consideration of the Legislature of Missouri. The following is his language:

"That a teacher of proper capacity and acquirements, thoroughly educated in a Normal school, can communicate more learning to his pupils in six months, than is usually communicated, under the old system of teaching, in double that period, is fully believed. If it were affirmed that a mechanic, who had been carefully instructed in the theoretical and practical departments of his trade, would do twice as much work, and do it twice as well, as one who should assume that, without previous discipline, he was possessed of the trade by instinct, the affirmation could hardly fail to be credited. And is it not equally apparent that the educator, whose functions embrace, in an eminent degree, both art and science—who is required to study and understand the different dispositions and propensities of the children committed to his care—to whose culture is confided the embryo blossoms of the mind—who is carefully to watch their daily growth, and to aid and accelerate their expansion, so that they may yield rich fruit in beauty and abundance—in short who, in the incipient stage of its existence, is to attune the delicate and complicated chords of the human soul, in the moral and intellectual harmonies of social life; is it not equally apparent that such a mission cannot be worthily performed, without careful preparation?"

While there seems to have been a unanimity of opinion in Missouri in favor of establishing some seminary, or for making some provision to supply the wants of the State by competent teachers, we regret to find so much diversity of opinion as to the best means of accomplishing the object. Some have given a preference to a Normal school, organized upon the principles of the manual labor system; but the project that seems to have met with most favor, is to add a new professorship to the University, to give instruction in the "Theory and Practice of Teaching."

The manual labor system we think entirely out of the question, both from the amount it will take to put it in operation, and its doubtful success as an experiment. For some fifteen years manual labor schools have been the rage, yet out of the number established, scarcely one

in twenty has succeeded. We also deem the establishment of an additional professorship in the University as an impracticable experiment. First, because the experiment has been tried elsewhere and has not succeeded. Col. Young in the report above referred to, after an experience of nineteen years in the State of N. York, pronounces "the system to a great extent, to have been a failure." Secondly, we object to it, because even with the assurances of success, it would only furnish male teachers, as females could not, and would not, enter the University as students. Yet females, from their greater patience, better acquaintance with the wants, better apprehension of the instincts, and more familiarity with the habits of childhood, are the better qualified by nature, and the safest hands into which to commit the delicate task of the moral culture, and intellectual development of the younger portions of the growing generation. This also is the only profession which by our social organization is left open to females, and the only employment in which female labor can be turned to any account. Yet even here, her services yield her but little more than one-half what similar services yield males. Experience demonstrates the superiority of female over male educators wherever the experiment has been tried; so that in all States where there is a common school system the ratio of increase of female teachers over male teachers has been as five is to one. In Massachusetts, in the year 1837, the number of male teachers in the common schools was 2,370. The females 3,591. In 1845 the number of males 2,595, while the number of females was 4,700. Showing an increase in eight years of 225 of males and 1,109 females. The most gratifying fact connected with this is, that during that time the compensation of both male and female teachers had advanced—the former more than 16 per cent. and the latter more than 12 per cent. In 1846 the number of males was 2,595; females 4,997, showing an increase of 10 of the former and 297 of the latter. The Hon. Horace Mann, for so many years the devoted Secretary of the Board of Education of Massachusetts, in view of these facts, makes the following observation in his report of 1847:

"Hence it appears that the number of female teachers in our schools is now almost twice the number of males. The regularity of this increase shows the soundness and stability of the principle on which it is advancing. The Normal schools have contributed greatly to this most desirable result; and in this way alone—that is, by substituting the cheaper and better services of females—they have already saved the State a great portion of all the money they have cost. A *man* may keep a difficult school by means of authority and physical force; a *woman* can do it only by dignity of character, affection, and such a superiority in attainment as is too conspicuous to be questioned. It is the possession of the latter qualities which has enabled so many of our females to keep winter schools, and thus increase the relative number of female teachers to a degree so surprising."

We, therefore, seriously object to the proposed professorship in the University, for the reason that it would debar us from availing ourselves of the better and cheaper services of females. The latter of which is

matter of serious consideration, especially when putting a school system in operation in a new country.

We object to the same project upon other grounds; one of which is, that, for some time at least, even in the most populous portions, there will be vacations in the schools of from three to eight months. According to the practice adopted in the Normal schools, during the vacation, the teacher, who is aware of his deficiencies, enters the school, and studies his protession, until the season comes round to re-open the district school; and so, from time to time, until he has completed his professional studies. He would then supply the means of his own support while attending the State school, and would at once give evidence to the community of the benefits to be derived from the Normal school system. But, according to the other mode, he would enter the University and remain there for years, the State not only not deriving any benefit from the system, but the community be unfurnished with evidence to judge of the usefulness of the system. Moreover, the Normal school system places it within the reach of those of the humblest means, to qualify themselves for the profession of teaching. While that of the University could only be made available by those who either possessed abundant means or powerful and influential friends to aid them.

The next consideration is, what will it require to put a Normal school in operation? Massachusetts appropriates annually $2,000 for each of her Normal schools, three in number. New York appropriates $2,500 to each of her schools, four in number. We should suppose that $2,500 for the first two years, and $2,000 annually thereafter, would be sufficient. The first few years the expenses, as a matter of course, would be greater, on account of the outlay in scientific apparatus, library, &c., than afterwards. For the erection of the necessary buildings, we would rely upon the public spirit, enterprise, and liberality of our citizens; and we would locate the school at the place which shall furnish the greatest amount in money for the building, and a proper site for its location. To every Normal school there is attached what are called model schools, which are taught by the pupils, under the immediate supervision of the principal. Let a town, then, furnish a suitable building, say at a cost of ten or twelve thousand dollars, and it will have its four to five hundred children taught gratis, and in a superior manner to any in the State. This was the manner in which Massachusetts got her Normal schools established.

If there should be but one Normal school established, provision should be made to admit both male and female pupils. This is the case at the Bridgewater and Westfield Normal schools, in Massachusetts. But the school at West Newton is entirely devoted to educating female teachers.

It was our intention to give a detailed history of the rise, progress, results and present condition of the Normal schools wherever tried; and the results of experiments made by professorships in academies and colleges, and to show that the former have never been abandoned, but adopted when the academic and collegiate systems had exploded. Should it be deemed necessary, we will go over the whole ground here-

after. At present we will only remark that Normal schools originated in Germany more than one hundred years ago. The first one was established in Stettin, in Pomerania, in 1735, from whence they gradually spread, until they have been introduced into almost every country of Europe, embracing even the Czar of Russia and the Sultan of Turkey, as their patrons. In 1846 the Sultan appointed a Minister of Public Instruction, established a Normal school, and supplied it with teachers from western Europe. France, by law of 1833, established a Normal school in each of the eighty-six Departments into which France is divided. In 1837, M. Guizot, then Minister of Public Instruction, says, "there are eighty-three of these schools in full operation, forming in each Department a grand focus of light, scattering its rays in all directions among the people. Victor Cousin, while Minister of Public Instruction of France, in his report upon the education of Holland and Germany, which he visited officially in person, for the purpose of collecting information respecting their systems, says, "I attach the greatest importance to Normal schools, and consider that all future success in the education of the people depends upon them." So universal has been the favor with which they been received in Europe, that even Old England, as late as 1845, established two, one at Battersea, and one at Chelsea. Three years prior to that, to-wit, in 1842, Lord John Russell, as Primier, had been compelled to abandon the project, on account of the opposition the appropriation (£30,000) met with in the House of Lords.

There are three Normal schools in Scotland; and, in 1838, the National Board of Education for Ireland, founded a Normal school at Dublin. Spain and Italy have recently adopted them.

Another important matter, and directly bearing upon the legislation and administration of a school system, is the appointment of a Superintendent of Public Instruction. It will be conceded that a legislature cannot legislate understandingly or wisely upon any subject, unless it have every fact and data showing all the interests and bearings of the subject upon which it is called to legislate. In Missouri we have no school statistics, and can have none, unless the charge of collecting them is entrusted to a special officer. All that the law now requires is, that each county shall make return of its educable population to entitle it to its *pro rata* of the State School Fund. Nothing is known of the value and productiveness of local funds nor the number of children attending school; nothing of the various wants of the districts in the State; nothing of the character of the schools, nor of the qualifications of the teachers; nothing of the difficulties the school committees encounter in organizing and sustaining the schools. And as these are not known, there are no counsel and suggestions given how to surmount or remove the difficulties; no plans of improvement suggested, either as to construction of school houses, furniture, apparatus, nor as to the mode of instruction; no defects in the law pointed out and remedies suggested. The legislature cannot act understandingly unless it know precisely what the condition of things is, and what is required to be done. Yet our school committee-men must be without aid, and left to struggle on with the difficulties that

surround them, unpitied and unsustained, because there is no source through which they can derive the necessary assistance, and the legislature cannot and will not act upon isolated cases. These and other clogs that are at present attached to, and weigh down our school system like an incubus, can only be removed by appointing a properly qualified person as superintendent of common schools. This fact is so obvious, that it has not escaped the attention of any person here or elsewhere, who has given any attention to the subject. In the Report of the Committee on Education, made by the Hon. W. Claude Jones, already referred to, it is recommended that the duties of superintendent of common schools be imposed upon the Normal professor, proposed to be added to the University. We do not believe that any professor of the University would have leisure enough to perform the duties that ought to devolve upon a superintendent; because, to do anything like justice to the subject, would require constant and unremitted labor; whereas, our professors have scarcely enough unoccupied time for taking the necessary recreation. No doubt a Normal professor could give much valuable information, and suggest many useful hints relative to putting a school system in operation, or improving it when established. But we see no good reason, on this account, to saddle him with duties, responsibilities and labors which are foreign to such knowledge. A worthy superintendent ought to avail himself of all knowledge within his reach, in relation to the practical operation, improvement, and management of a school system; and therefore, would, with proper deference, avail himself of all the information the Normal professor, or any other person may possess. But we doubt of the practicability of making the Normal professor superintendent of public instruction. It matters not how conscientious and impartial he might administer the duties of the office, the cry of favoritism would soon be raised against him by those who are not graduates of his school.

We might quote extensively from documents emanating from the different departments of the State government of our own and other States, urging a separation of the office of Superintendent of Public Instruction, from the duties of any officer charged with other duties, and organizing a separate department under the control of a special officer, but we must forbear, as it would extend the limits of this article, already sufficiently long, beyond what we originally designed. We cannot, however, refrain from quoting the following extract from the report of the Hon. T. Campbell, late Secretary of State and Superintendent of Public Instruction of Illinois, as it is forcibly expressed and directly to the point:

"The practical operation of any school law in our own State, is yet to be tried. Notwithstanding our statute book has been encumbered with school laws, no one has ever been carried into vigorous and efficient operation; and our people were, at the time the present law was enacted, as inexperienced in all the details necessary for the successful administration of the law, as if the question had been presented to them for the first time.

"The legislature which enacted the present law, would appear to

have been influenced more by a feeling of economy than true wisdom. It appears to have been forgotten that the great desideratum of every such law should be, to combine efficiency with economy. I would beg leave to state, that when the legislature imposed the duties of superintendent on the office of the Secretary of State, it did it for the avowed purpose of avoiding the expense of employing a superintendent whose duty it should be to attend solely to the subject. The business of the Secretary's office was sufficiently laborious to require all his time and attention; and if he faithfully discharged all the duties imposed on the Superintendent of Common Schools, he must neglect those incumbent on him as Secretary of State. This the framers of the law could not have expected."

Again: after adverting to the facts that in the Eastern States, formerly the Secretary of State, or some other officer, was ex-officio Superintendent of Common Schools, and the result of that connection, Mr. Campbell proceeds:

"It was soon discovered, that to carry the law into practical and efficient operation, it would require all the time of the most active, zealous and talented officer. Memorials were addressed to the legislature setting forth in the strongest terms, the absolute necessity of having a State Superintendent appointed, with a salary adequate to the labor and responsibility of his office. The legislature, listening to the voice of reason and experience, created the office of State Superintendent, and defined his duties by law. The beneficial results were soon to be seen in the improved condition and rapid progress of their schools."

After adverting to the means the Superintendent must employ to awaken parents, teachers and officers to a sense of the importance of the subject, and excite them to activity in putting the law into efficient operation, Mr. Campbell adds:

"It is the want of information on the subject of popular education that is the cause of the painful apathy which prevails amongst the people; a want of knowledge of the progress our sister States have made, and the means by which they have been enabled to carry their different systems into practical and successful operation.

"In Prussia, where common schools have received the greatest attention, and where the government has used every means in its power to mature a system, the benefits of which might reach the humblest subject, talented and learned men have been despatched to other countries, where common schools were supposed to have arrived at the highest degree of perfection, for the purpose of collecting information, and obtaining knowledge of the different systems. Elaborate reports have been compiled from these beneficial sources of information, and widely circulated amongst the people. This has produced not only a general and enthusiastic action on public sentiment, but has caused wise modifications, and great improvements to be made in their school laws."

In order to make any school system effective, particular care must be taken in the organization of the machinery by which it is to be put

and sustained in operation. To give it an efficient head, is certainly a consideration of the first importance; but the head alone does not suffice—there must be other members whose functions, although not so conspicuous, must give the head vitality and the power to think and act. In the organization of a school system, its executives must extend to every district and neighborhood within the limits of the State, so that the system will be as all-pervading and active throughout its borders, as the nervous system in the human body. A school system that is less than this, is a mere apology for a system. One man, or a thousand, working isolated and alone, without concert, and often without knowledge, can never accomplish what is desired. The following is our plan for a detailed organization of a school system:

The local school funds, such as township, county, &c., funds, are now managed by the county court. We would recommend that a court of school commissioners be organized in each county, and that the duties of managing the school fund be taken from the county court, and entrusted to the court of commissioners. This court we propose to be constituted of the presidents or chairmen of the boards of directors or trustees, of the different school corporations or districts, in each county. That upon assembling at the court house, they elect a president of the court of commissioners, who shall hold his office until the next biennial election, and who shall be county superintendent of public schools. That at the next biennial election, a county superintendent for each county be elected by the people of the respective counties, who shall hold his office for two years, and until his successor is elected and qualified.

The members of the court of commissioners to be paid one dollar per day, by the county, the same as county judges now are, and the president thereof two dollars for every day they shall hold a session. That the members of the respective districts be required to furnish annually, at a specified time, the number of children of educable age within their district, &c.; the number who have attended school during the year; the average attendance; the length of the term that the school or schools were kept; the grade of studies pursued; the amount of money expended; the resources from which it was derived; with all such other information as may be of service to be known, to provide for the educational wants of the State. That an abstract of all such reports from the different districts, be made out and signed by the County Superintendent, and transmitted to the State Superintendent.

Should this plan be adopted, more than one thousand men would be immediately enlisted in the cause of public instruction, and to act in concert in the great cause. These men, from the fact that the people have selected them to take charge of educational matters, it is presumable, are those who are, and have been, most prominent in promoting schools in their respective neighborhoods; and if so, are the safest and best depositories of the trust, to put into vigorous operation a general system of education. We invite particular attention to this, impressed as we are with its importance. For depend upon it, a system however perfect in detail or provident in means, must and will fail, if its administration is confided to lukewarm and indifferent hands.

Those who will have its administration, cannot expect always to sail upon a calm, summer sea, with a favorable breeze. No—storms, in this as in every thing else, will arise, and tempests beat which will make the mercenary quail and flee. Commit, then, the ship to those of strong hands and brave hearts, who have faith in God and man, and if human skill can save it, it will make the port in safety.

There are two other subjects intimately connected with a school system, which we had hoped our limits would permit to dwell upon at some length, viz: Teachers' Institutes and District Libraries. We will only advert to them briefly, and then close for the present. Teachers' Institutes, are intended for those teachers, who have not had the advantage of studying their profession systematically, and who cannot spare the time to attend the Normal schools. The way of proceeding is somewhat on this wise: There is a small appropriation placed at the disposal of the General Superintendent, say for the meeting of one Teachers' Institute, two hundred and fifty dollars. The Superintendent gives notice that at a certain time, an institute will assemble at such place as shall be designated by the largest number of teachers. The point having been designated, notice is given of the time and place of meeting. With the means placed in his hands, the Superintendent procures the services of the most eminent teachers and lecturers on the science of teaching, to attend the meeting of said institute, where from ten to twenty days, the teachers assembled are drilled and instructed in the various branches taught in the schools, and the manner of teaching them, and lectures delivered upon school government, and every thing relating to schools. These institutes have been found an efficient means of improving the qualifications of teachers, and the character of the schools, in the States where they have been tried. It must be evident that Normal schools cannot immediately supply all the wants of the States; therefore, institutes, to a certain extent, make up for former deficiencies.

District libraries are established in every school district, in several of the States. They are of the highest utility for the general diffusion of knowledge among all classes, and bring intellectual culture within the reach of every age, sex, and condition, however limited their means, or defective their education. Many that can, and would read, are denied the luxury of a book, by their poverty; others, for want of better information, procure books that not only contain no useful information, but are positively injurious, sapping the very foundations of virtue and morality. But, in the district school library are to be found not only good books, but every variety of them, filled with information that is useful in every pursuit and condition of life. They generally embrace ancient and modern history, biographies, voyages and travels, natural philosophy and history, the arts and sciences, generally, essays, &c. In fact, just such works as ought to be in the hands of every citizen of this wide-spreading Republic. Massachusetts and New York annually make large appropriations from their State Treasurys, for the establishment and enlargement of district libraries. Massachusetts gives $15 out of the State Treasury, to each district that raises a similar amount. New York appropriates $55,000 annually, upon condi-

tion that the districts raise a similar amount by taxation. In Michigan and Wisconsin, the same system prevails.

We have now given what we believe to be a practicable plan for organizing and supporting a school system in Missouri. We do not claim that it is perfect, nor do we claim much originality for it. Most of what we propose has, in some form or other, occupied the attention of the Legislature for years, as all who are familiar with our Legislative history, know. We owe many suggestions to the Executive and Legislative documents that have emanated from the different departments for the last four and six years. We could not always give credit to the proper source, from whence we derived them, nor assign the reasons for selecting them, and rejecting others, of which they formed a part, and with whom they were inwoven in a system. While, therefore, none will find their own system entire, we hope they will find enough of it to secure their approbation and support. We have endeavored to select from all systems what we found had been tried and been successful elsewhere, and to discard what has been untried, or tried and failed in other States. We do not say that such failure is a final verdict against any measure, and that the result would be the same, tried under a variety of, and different, circumstances. But, for the present, we think it safe to commence nothing, but what we have the assurance can and will be carried through. In the incipiency of any enterprise, a failure is, in most cases, fatal; or, if not, it deals a blow, from which recovery is slow and often doubtful. Precedents, in such cases, and especially in the one under consideration, wherein we have so many and such brilliant ones, is not only safest, but most prudent. When we have established a system, and it has acquired strength and stability, and requires room for development and expansion, then it will be time enough for trying experiments.

In conclusion, we do not feel that we have done, or can do, justice to the great subject to which we have called public attention. And we regret that a subject of such great and paramount importance, has not fallen into hands qualified to treat it worthily. Confident that public opinion is ripe for, and demands the establishment of, a system of public instruction, and encouraged by the friends of the cause, we could not refrain from adding our mite to aid in the great object. It is now left with those into whose hands the people have committed the legislative power for the time being, to say whether public expectation in respect to this matter, shall be met, or whether it shall be again deferred, and the growing generation in Missouri be deprived of advantages which are now enjoyed by the young, almost in every sister State. Will Missouri be so blind to her interest, and so reckless of her political character, as not to move in this great and vital matter, until forced by public opinion elsewhere? As it is, she will be among the last; let her, at least, take precedence of the rest among the tardy. Intelligence is the foundation and superstructure of our political edifice; and upon the continued intelligence of the people, depends its permanence and stability. It is an axiom of our political creed, that the nation has a right to demand the services of its citizens in the camp, in the courts of justice, in its halls of legislation, and in its executive

chairs. If the government have a right to demand these services, then it is the duty of the citizens to render them. If the citizen owes them, then it is the duty of the government to qualify him to discharge them. Hence we derive the obligation of society to educate its members; and every society that does not do so, is false to its mission, and derelict to its duty, and loses its right to punish the guilty, or command the virtuous and intelligent. Sins, in this world, are not confined to individual transgressions; there are also social sins—and the last we look upon with more abhorrence than the former. Individual transgression springs from individual depravity, but social iniquity springs from the vitiated moral sense and depravity of a whole community, and are more deleterious in their effect. The discharge of all social obligations, is the first step towards the perfection of the individual. Religion, morals, patriotism, the entire concerns and interests of humanity, present and to come, then enjoin it as a sacred duty and obligation, to cultivate the mind, the rational part of man, upon whose action all of these depend for their benign and beneficient effect, in ameliorating and improving the condition of man here and hereafter. Awful responsibilities rest somewhere; let not selfishness and paltry interest blind the eyes of those upon whom it rests, so that they may not see, or appear not to see, and discharge them.

[To the able and elaborate researches of the author of the foregoing article, we wish to add the following extract from the Constitution and Laws of Louisiana: The Constitution of that State provides that "there shall be a superintendent of public education, to hold his office for two years. Free public schools shall be established throughout the State; the proceeds of land granted for the purpose, and of lands escheated to the State, shall be held as a permanent fund, on which six per cent. interest shall be paid by the State, for the support of these schools."

The law of 1847 imposes a direct tax of one mill per dollar upon all taxable property in the State, and appropriates the entire poll tax collected to school purposes.—EDITORS.]

ART. V.—THE IMPROVEMENT OF TIME.

How shall the people of the west dispose of their surplus time? We have shown elsewhere that there is neither a home nor a foreign demand for a large portion of our surplus products;* but we conclude that the case is quite different in regard to our surplus time. For this commodity there is a home market—one that is in no danger of being affected by foreign competition, nor depressed by over production. As such a market cannot be otherwise than interesting, especially to our

*Vide Volume I, page 579.

agricultural readers, we propose to discuss, briefly, the nature and extent of the demand, and also the principles upon which it is based.

The time that remains to an individual after he has provided the common necessaries and comforts of life, may be regarded as so much wealth, in the best sense of the term ; for, unless accumulated wealth serves to relieve the possessor from labor and anxiety, so as to afford time to cultivate and improve his mental and moral condition, it is a useless incumbrance to the owner, and of little benefit to society,

The fertile soil and genial climate of the west, enable the agriculturalists of this region to spare more time from labor, than can those of any other ; and hence, they ought to be, and doubtless are, more wealthy than any class of individuals that constitute as large a portion of the population of any other country. But like the young and inexperienced heirs of a rich parent, they appear to have no just conceptions of either its use or value, and are guilty not only of making a misapplication of their surplus time, but of their labor also. For, while they produce a redundancy of the leading staples, they are destitute of many comforts ; and are total strangers to many luxuries that might be produced by a small portion of the labor that is improvidently thrown away in the production of articles that never find a remunerating market.

We cannot suppose that any of the subjects that we design touching are new to our agricultural readers, or indeed that they have not already made more or less progress towards the attainment of the ends which we propose. But we shall aim to place some of these topics in a light in which they are not generally viewed, with a hope that we may arrest the attention and excite a new interest in the minds of such as have hitherto regarded them with indifference.

One of the principal constituents of a comfortable state of existence, is health—and a portion of the surplus time and labor of the farmer could not be better employed than in removing, and guarding against the causes of disease. The drainage of ponds, and wet or marshy grounds, in or near the farm, and the improvement of the beds or channels of small water courses, would, in our opinion, prevent most of the diseases that afflict the people of this region. We leave it to those who have suffered from the fevers and agues of this country, to estimate, if they can, the value of such improvements ; simply suggesting, however, that in addition to the value of time lost, physicians' bills and bodily suffering, they should take into consideration also, the anxiety and mental suffering which pervades a whole family, and not unfrequently a neighborhood, in consequence of the sickness or death of one individual. In this climate, comfortable dwellings are also necessary to health, and much yet remains to be done in this department of labor.

The erection of substantial barns, stables, and shelters for every description of stock, likewise demand a portion of the surplus time and labor of the farmer. This is a department of agricultural economy that involves other considerations than those of pecuniary advantage. Such improvements are calculated to give quiet and repose to the owner, and enable him to estimate with more certainty the value

and profits of his operations, while they protect him against the innumerable vexatious accidents that annoy those who neglect to make such provision. The petty annoyances which continually arise from the want of a well regulated establishment, are calculated to impair the temper, and mar the happiness of individuals—to make them unkind in their families, and disagreeable to their neighbors. And one that can look with indifference upon his stock, shivering in the cold rain and sleet of winter, will, in time, cease to sympathise with human suffering also. A righteous man regardeth the life of his beast ;† and we may safely conclude that one who treats his stock with cruelty, is destitute of those amiable traits of humanity, which are necessary to make him a good member of society.

Another portion of this surplus time might be profitably appropriated to the improvement of the soil. This, however, would tend, in time, to diminish rather than enlarge the amount of labor required for agricultural purposes. The population of the earth can be sustained to its present extent in numbers, only by the preservation and improvement of the soil; and one who destroys the fertile properties of his land until it can no longer sustain the laborer that digs and plants it, wrongs mankind, and sins against the providence of the Creator. The provision made by nature for the support of man in a state of civilization, can be appropriated and made available only by the observance of laws that are certain and irrevocable; and hence, it is self-evident, that civilization must advance or recede according to the degree of obedience yielded by man to their requirements.

We are aware that some individuals have grown rich by exhausting their lands; but this occurred in districts where land was abundant and cheap. Such a result could never happen in populous districts, where a system of improvement prevailed; for here the money made by exhausting the soil would not be sufficient to purchase an equal quantity of improved land.

But be this as it may, it is obvious that every acre that is destroyed or rendered less productive, diminishes the capacity of a country to sustain its inhabitants, and if the deterioration of the soil of a state or district should continue at the rate of one per cent. per annum through a succession of years, it would not be long before the increase of population would be entirely checked, and famine ensue, unless relieved by emigration, or by a resort to the production of manufactured articles, to be exchanged with other countries for bread. As evidence of the truth of this proposition, and of the importance of sustaining and improving the soil, we will point to a region that was originally the garden of this broad continent—one possessing a climate adapted to the development of the highest state of civilization, and a soil of matchless fertility; its border washed by the ocean, and affording bays and harbors, safe and sufficient to accommodate a boundless commerce—watered by noble rivers and beautiful streamlets—rich in mineral wealth—and adorned by scenery grand and beautiful, calculated to elevate and refine the most sordid nature; and withal, giving birth to heroes and sages, whose names stand unrivalled

†Prov. xii, 10.

in the pages of history. Such was this region within the memory of individuals who yet survive. But not appreciating these advantages, and blind in regard to their true interest, the inhabitants laid waste the forest, and subjected the soil to an improvident and destructive system of cultivation, extracting from it the essential principles of fertility, through a continued succession of years, and exporting them in the form of grain and other products, to foreign countries, until in time, a state of sterility ensued, that rendered the land unprofitable for cultivation. Thus despoiled of its beauty, and its strength wasted by the fathers, their offspring were driven forth from the home of their birth, and the graves of their ancestors, to seek the means of subsistence in the unbroken forests and the uncultivated plains of the south and west—regions not yet rifled of their wealth, but lacking many of the advantages originally pertaining to the one thus ruined, and, in part, made desolate. And so powerful were the causes acting upon the inhabitants of this region, that in one period of ten years, thirty per cent. of its population migrated to other lands.‡ Yet, so blind is man to the true cause of the calamities which afflict his race, and so slow is he to learn wisdom, even from the experience of the past, that many of these individuals are pursuing, in the south and west, the same system of destruction that drove them from the east. Let them read the future in the past; and bear in mind that like causes must every where produce similar effects.

The cultivation of orchards, vinyards, gardens, and ornamental trees, also require a portion of the surplus labor and time of the people of the west. These pursuits, though not without pecuniary profit, are to be considered chiefly with regard to the luxuries which they afford, and the moral influence which they are calculated to exert over those who engage in them. When the commodities necessary for the comfort and convenience of our corporeal nature have been provided, to a reasonable extent, a further accumulation adds nothing to our physical enjoyments. Were it otherwise, and did our capacity of physical enjoyment enlarge with the means of gratification, man would look to this as the only source of happiness, and totally neglect the means of mental and moral improvement. Hence, it was ordained, that after the wants of his physical nature should be supplied, the time, if any remained, should be appropriated to intellectual improvement, moral culture, and the gratification of moral desires. These pursuits lead into a boundless field of employment, where competition serves but to increase the demand for labor, and where gratification enlarges the capacity of enjoyment. And these are the pursuits which we desire to commend to all who have time to devote to them. We shall leave, for the present, our readers to determine what portion of their time they will devote to intellectual improvement, and confine our observations, in the conclusion of this article, to the philosophy involved in cultivating a taste for the "beautiful."

---

‡The increase of population in Virginia and the Carolinas, from 1830 to 1840, was but a small fraction over two per cent.—more than thirty per cent. less than the average increase of the whole United States in the same period.—[Eds.

Although the gratification of moral desires is not necessary to the existence of the individual, yet it may be affirmed that the happiness of man is limited and determined by the degree of his moral attainments, and that the one bears a fixed and certain relation to the other.

Man possesses the faculty of receiving pleasure from the observation of certain forms and properties of matter denominated "beautiful." This faculty is an inherent property of his nature—the source of desires that demand gratification; but the desires, emanating from the wants of his physical nature, being more vehement and urgent, obtain precedence, and often predominate so far as to suppress, and almost extinguish the desires of his moral nature. This sense of beauty is a source of moral action, and was designed to harmonize the feelings and affections of man with the laws and economy of nature.

The emotions of beauty are pleasing, social, moral, and during their continuance chasten the imagination, and exclude all selfish and vicious desires; for when our feelings and affections are brought into harmony with nature, every evil propensity must cease to exist. One who is a stranger to these emotions, lacks an essential test of moral truth, and possesses no better guide for his actions, than selfish and heartless expediency.

> "The man that hath no music in himself,
> Nor is not mov'd with concord of sweet sounds,
> Is fit for treasons, stratagems, and spoils:
> The motions of his spirit are dull as night,
> And his affections dark as Erebus:
> Let no such man be trusted."

And what is music else but beauty—"the concord of sweet sounds?" And although the emotions which it excites may be more vivid than those produced by natural objects, yet they are not so purely moral, and therefore less to be trusted. The former are mingled with human passions, and may incite to error—while the latter, emanating from the pure fountain of nature, must always be true, and lead to virtue. Behold! all nature is arrayed in beauty; but man is not permitted to enjoy the highest delight that the emotions of beauty were designed to impart, without combining his own labor with the works of nature.

We read that, out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food. Here was ample provision made for both moral pleasure and physical comfort; but man was not permitted, even in the Garden of Eden, to enjoy these blessings without a price—for we read also, that, he was put into the garden to dress it, and to keep it. The earth was in its primal state—it was not yet encumbered with the thorn and the thistle—the trees grew without culture—but they required the hand of a man to dress them, and God saw that it was good. And who ever planted and pruned a tree that delighted not more in this, than in all the trees of the wood? It may be that in the eyes of others, many trees were more goodly, but this was reared by his own hand—he pruned and dressed it—watched the swelling bud—the tender germ—the opening flower—the

broad spreading foliage, and the ripening fruit; and he almost deemed it a thing of his own creation, for it was planted and fashioned by his own hand. The birds came and nestled in its bosom, and sung sweetly on its branches—his children disported in its shade, and plucked from its bending boughs the blushing fruit; and more than all, his pleasurable emotions were reflected the while from a heart that beat responsive to his own. Is there aught else in all that wealth can purchase or station give, that can excite emotions more refined, or fill the heart with bliss more pure?

The forest and wild flower are things of beauty, and it is sweet to roam beneath the broad shade of the wide-spreading oak—to listen to the song of birds, and "inhale sweet odors from the breath of flowers;" but these owe nothing of their beauty, or being to our care. We neither planted, pruned nor dressed them; and hence, the emotions which they excite, though pure and pleasurable, are not enriched by a consciousness of duty performed, nor mingled with the affections of those for whom we live and delight to labor.

RAILROAD, CANAL AND STEAMBOAT STATISTICS.

[The following statistics have been selected with reference to the leading subject of the present number. This is an arrangement that we shall hereafter endeavor to observe, as it will, in our opinion, be found more convenient to our readers, than if the statistics bore no relation to the other matter contained in the number.—EDITORS.]

RATE OF RAILROAD FREIGHT AND FARES ON SIXTY-EIGHT RAILROADS IN THE UNITED STATES.

The American Railroad Journal furnishes the following statement of the rates of fare and freight on sixty-eight American roads. It will be found exceedingly convenient for merchants and others.

Eastern Railroad, Boston to Portland, 105 miles—freights on groceries, grain, iron, butter, and dry-goods, $3 55 through, or 3.4 cents per mile; light and bulky articles, $5 through, or 4.76 cents per ton per mile; fare, $3 through, or 2.85 cents per mile.

Boston and Maine Road, Boston to South Berwick, 72 miles—freight, salt, sugar, groceries, iron, and coal, $1 76, or 2.14 per ton per mile; light and bulky articles, $2 88, or 3.5 per ton per mile; one horse, $3 62; two horses, $5 43; one horse carriage, $2 71; two horse carriage, $3 62; four horse carriage, $5 43; fare, $1 62 through, or 2.25 per mile.

Lowell Railroad, 26 miles—merchandise, generally, $1 25 per 2,000 lbs.; by cargo through, $1 10; passenger fare, 56 cents, or 2.15 cents per mile.

Nashua and Lowell, 15 miles—freight generally, $1 per ton; horses $1; one horse coaches, $1; passenger fare 40 cents, or 2.66 cents per mile.

Concord Road, Nashua to Concord, 34 miles—freight is divided into 1st and 2d class, and is charged about 4 cents and 3½ cents per ton per mile, or $3 and $2 50 through to Boston, 75 miles, and lumber 75 cents per 1,000, and hard wood $2 75 per cord; pine wood, $2 25 through; horses, one, $3 25; two or more at $2 50 each; two horse carriage, $2 50; fare, 80 cents, or 2.35 per mile.

Worcester Railroad, 44 miles—coal, iron, lumber, etc., 4 cents; heavy merchandise, such as sugar, salt, butter, etc., about 6 cents; groceries and dry-goods, 6 to 8 cents; light and bulky merchandise, 6 to 10 cents per ton per mile; passenger fare, $1 25, or 2.8 cents per mile.

Boston and Providence Railroad, 42 miles—coal, iron, grain, and merchandise generally, from 5 to 7½ cents per ton per mile; horses, $4; carriages, $3 to $4; passenger fare, $1 25, or 2.97 cents per mile.

Stonington Road, from Providence to Stonington, 47¾ miles—corn, grain, iron, coal, sugar, salt, and dry lumber, $2; butter, dry goods, and bulky articles, $2 80 per ton; one horse, $3; stage coach, or large carriage, 6½ cents per mile; fare, $1 50, or 3.1 cents per mile.

Boston and New York, via. Providence and Stonington, 216 miles—freight, measurement goods, 7 cents per cubic foot; by weight, 30 cents per 100 pounds; passenger fare, $5, or 2.3 per mile.

Boston to New York, via. Fall River, 223 miles—freight, 7 cents per cubic foot, and 30 cents per 100 pounds; passenger fare, $5, or 2.24 cents per mile.

Fall River Railroad, 53 miles—coal, iron, and grain, $2, and sugar, salt, groceries, butter, and dry goods, $2 50 per ton; light and bulky articles, charged by measurement, 140 cubic feet to the ton; passenger fare, $1 35, or 2.54 per mile.

Boston and New York, via. Norwich—freight as on the other through lines; fare through, $5—and if a passenger wishes to stop over a day on the way, he can do so by applying to the agent in New York or Boston.

Norwich and Worcester Road, 60 miles—we have not got the rates of freight; fare, $1 50, or 2.5 cents per mile.

Old Colony Road, Boston to Plymouth, 37 miles—freight generally, 4½ cents per ton per mile; light and bulky articles, 140 feet to the ton; passenger fare, $1, or 2.66 cents per mile.

Connecticut River Road, from Springfield to Greenfield, 36 miles—freight, iron, coal, manure, lumber, grain, sugar, butter, and salt, $2; dry goods and groceries, $2 40 per ton through; fare, $1 10, or 3 cents per mile.

Providence and Worcester Road, 43½ miles—freight, groceries, dry goods, grain, sugar, salt, butter, iron, coal, manure, and lumber, $3 for 2,000 pounds; bulky articles, 15 cents per 100 pounds through;

fares, 1st class, $1 25; 2d class, 85 cents, or 2.84 and 1.9 cents per mile.

Boston and Fitchburgh, Boston to Fitchburgh, 50 miles—freight, all heavy articles, as butter, salt, sugar, groceries and dry-goods, through per ton $2, or 4 cents per ton per mile; light and bulky, 4 cents per ton of 150 cubic feet per mile; horses, at 1 ton each, or 4 cents per mile, or $2 each; carriages, one horse, $1; two horse, $2, each through; fare through, $1 25, or 2.5 cents per mile.

Western Railroad, Worcester to Albany, 156 miles—freight, sugar, salt, butter, grain, iron, coal, lumber, and groceries, $4 per ton of 2,000 pounds, or 2.56 per ton per mile; dry goods and bulky articles $7 per ton of 2,000 pounds through, or 4.44 per ton per mile; one horse, $10 50; two horses, $12 25; three horses, $14, at the risk of the owners; one horse carriage through, $12 23; two horse carriage, $15 75; stage coach, or omnibus, $28, at the risk of the company; fare through, $4 25, or 2.72 cents per mile. The fare through from Boston to Albany, is, we believe, $5, or 2.5 cents per mile.

New Haven and Springfield Railroad, 62 miles—coal, iron, manure, lumber, sugar, salt, etc., $2 60, or 4.2 cents per ton per mile; groceries and dry goods, $3 50; grain, $5 20 per ton; passenger fare, $1 87, or 3 cents per mile.

Bridgeport, 98 miles—coal, iron, and marble, $3 per ton; sugar, salt, butter, $3 20; dry goods, $4; grain, 7 cents per bushel, through; horses and cattle, $3 50 each; two horse carriage, $5 25; passenger fare, $2, or 2.04 cents per mile.

New York and Harlem Railroad, 53 miles—coal, $2 per ton; iron, sugar, etc., 18 cents per 100 pounds; heavy merchandise, $3 50, and light $4 per ton; lumber, $3 50 per 1,000 feet; horses and cattle, $3 50 each; passenger fare, $1, or 1.88 cents per mile.

New York and Erie Railroad, New York to Port Jervis, 100 miles—25 miles by steamboat—freight to Otisville, 87 miles, coal $2 20; iron $42; heavy articles, such as grain, sugar, salt, butter, etc., etc., $3 50 to $4; groceries, $4 50; one horse carriage, $3; two horse, $4 50. We are not able now to give the rates charged upon *milk, fruits, vegetables, etc.*, on this line, but they are exceedingly low, and *morning* and *evening* trains are run *expressly* for such freight. We have not obtained the rates for the current year, since the road was opened to Port Jervis.

Patterson Road, 16½ miles—freights average about $2 50 per ton, delivered by the company; fare, 50 cents, or 3 cents per mile.

Morris and Essex Road, 32½ miles—freight, coal, iron, and manure, $2 25 per ton; corn and grain, 8½ cents per bushel; lumber, $3 per 1,000 feet; flour, 25 cents per barrel; fare, $1, or 3 cents per mile.

New York to Philadelphia, via New Brunswick and Trenton, 90 miles. This line is owned by *three* distinct companies, and managed by *two*. The *through* fare is $4, or 4.44 cents per mile—while the *way* fare, or *from place to place*, is only $2 25, or 2.5 cents per mile, as follows:—From New York to New Brunswick, 31 miles, 75 cents; from thence to South Trenton, 29 miles, 75 cents; and from thence to Philadelphia, 30 miles, 75 cents. This is what the people of those places pay, and what others pay, if they *wait over, at each place, for*

the next train; but if they pay *through*, from either end, it is four dollars. Yet *many have*, and *more will*, probably, hereafter pay *three times*, or from place to place, and go directly through, by the same train, for $2 25 to 2 75—while the stranger, or *uninitiated*, pay four dollars in the same car—or they *may* do so if they will. This line carries *little* through freight.

New York to Philadelphia, via Camden and Amboy, 88 miles. This line is owned by one company, and is partly by railroad and partly by steamboats—the fare through is $3, or 3.4 cents per mile. Freight, *legal* rates, fixed in their charter, 8 *cents per ton per mile*, or 32 cents per 100 pounds, or $7 20 *per ton*, through. The company have, however, exacted various prices, from 30 cents to $1 00 per 100 pounds, or from $7 to 22 40 per ton.

Reading Railroad, 92 miles—coal, $1 50 per 2,000 pounds; bituminous coal, iron ore, $2 10; pig iron and timber $2 50; bar iron, flour, grain, fish, and tobacco, $2 90; groceries and hardware, $4 25; dry-goods and furniture, $5 25; one horse, $6, and carriage per agreement; passenger fare, $3 50, or 3.8 cents per mile.

Philadelphia and Columbia Road, 82 miles—the freighting is done by private individuals at about 25 cents per 100 pounds; passenger fare $2 88, or 3.5 cents per mile.

Lancaster and Harrisburg, 36 miles—passenger fares $1 50, or 4.1 cents per mile.

Harrisburg and Chambersburg, fifty-six miles—coal, iron, manure, $1 50; lumber, corn, grain, $1 78; sugar, salt, butter, groceries, dry goods, $2 per ton through; passenger fare $2 12, or 3.78 cents per mile.

Philadelphia, Wilmington and Baltimore, 97 miles—freight 50 cts. per 100 pounds through; passengers, $3, or 3.1 cents per mile. This road carries very little through freight.

Baltimore and Susquehanna, 71 miles—coal, $1 37½; iron, $1 84; corn and grain, $2 20; salt and butter, $2; groceries, sugar, and dry goods, $2 50 per ton through; horses, $3 75, and four wheeled carriages $3 37 each; passenger fare, $2 12, or 3 cents per mile.

Baltimore and Ohio, 179 miles—coal, $2 75; iron, in open cars, $3 50; coffee, 25, dry goods, 35 cents per 100 pounds through; passenger fare $7, or 3.91 cents per mile.

Baltimore and Washington, 40 miles—coal, iron and grain, 4 cents per ton per mile; sugar, butter, salt, dry goods, light and bulky merchandize, $2 30 per ton through; horse, or *horse and wagon*, $5 75; passenger fare, $1 80, or 4.5 cents per mile.

Winchester and Potomac, 32 miles—coal, $1; iron $1 75 per ton; flour 18 cents per barrel; grain, 10½ per 100; sugar, dry goods, and light bulky articles, 14 cents per 100 pounds; horses $2 50 each; four wheeled carriages, $4 50 to 7 50; fare, $2 or 6.25 cents per mile.

Louisa Road, 50 miles—iron, $1 66; lumber $3 per 1,000; corn and grain, 14 cents per 100; sugar, salt, butter, 20 cents, and dry goods, 22 cts. per 100 pounds; horses, $4 66; four wheeled carriages, $4 50 each; light articles $4 per ton; fare $2 50, or 5 cents per mile.

Richmond, Virginia, to Washington City, 133 miles—iron, 2 cents per ton per mile; sugar, salt, butter, groceries and dry goods, ½ cent

per cwt. per mile; bulky articles, 8 cents per cubic foot to Fredericksburg; horses, 6 cents per mile; four wheeled carriages, 11 cents per mile; passenger fare, $5 50, or 4.13 per mile.

Richmond and Petersburg, 22½ miles—sugar, salt, butter, ½ cent per 100 pounds per mile; groceries and dry goods, ¾ cents per 100 pounds per mile; passenger fare, one dollar, or 4.34 cents per mile.

Petersburg to Welden, 63 miles—lumber $5 per 1,000 feet; corn and grain 6¼ to 8½ cents per bushel; salt, sugar, and butter, 25 cents per 100 pounds; horses and carriages, $3 each through; passenger fare, $3, or 4.76 cents per mile; second class, $1 50, or 2.38 cents per mile.

Gaston and Raleigh, 87 miles—lumber $7 per M.; corn and grain, 10 cents per bushel; sugar, salt, and butter, 35 cents; groceries, 55 cents per 100 pounds; light and bulky articles, 10 cents per cubic foot; horses, $4 20; carriages, $7 to 8 50; passenger fare, four dollars, or 4.6 cents per mile.

Wilmington and Welden, 161½ miles—corn and grain, 10 cents per bushel for 80 miles, 12 cents through; sugar, salt, and butter, 38 cts., and dry goods, 80 cents per 100 pounds through; horses $8; carriages, $10 through passenger fare, $6 50, or 4 cents per mile.

South Carolina, 136 miles—iron, 25 cents per 100 pounds; corn and grain, 7 cents per bushel; sugar, salt, butter, 25 cents per 100 pounds; light bulky merchandise, 8 cents per cubic foot through; horses, each, $8; four wheel carriages, $10 through; passenger fare, 1st class, $6 75, or 4.97 cents per mile.

Columbia, 68 miles—coal, iron, and manure, 25 cents per 100 pounds; corn and grain, 7 cents per bushel; sugar, salt, and butter, 25 cents; dry-goods, 35 cents per 100 pounds; light bulky merchandise 8 cents per cubic foot through; horses, $8 each; four wheel carriages, $10; two wheel carriages, $6 through; passenger fare, $3 38, or 4.97 cents per mile.

Georgia, 171 miles—iron, 15 cents per 100 pounds; corn and grain, 8 cents per bushel; sugar, salt, and butter, 30 cents, dry goods 60 cents per 100 pounds; light and bulky articles, 10 cents per cubic foot through; horses, $8; four wheel carriages, $10; passenger fare, $7, or 4.09 cents per mile.

Western and Atlantic, 100 miles—iron, 15 cents; sugar, salt, and butter, 25 cents; dry-goods, 40 cents per 100 pounds; grain, 8 cents per bushel; bulky merchandise, 8 cents per cubic foot through; horses $5; two wheel carriages, $3; four wheel, $6; passenger fare, $5, or 5 cents per mile.

Central, 191 miles—iron, 30 cents; salt, sugar, and butter, 40 cents per 100 pounds; corn, 12 cents per bushel; light bulky articles, 13 cents per cubic foot through; one horse, $10; four, or more, at $5 each; four wheel carriage, $10; passenger fare, $7, or 3.65 cents per mile.

Macon and Western, 101 miles—iron, sugar, salt, and butter, 25 cents, dry-goods 44 cents per 100 pounds; grain, 8 cents per bushel; light bulky merchandise, 9 cents per cubic foot through; one horse, $8; four, at $4 each; four wheel carriage, $8; passenger fare, $4, or 3.96 cents per mile.

Montgomery and West Point, 67 miles—barrels whiskey, etc., 60 cents; dry barrels, 55 cents; bulky merchandise, 8 cents per cubic foot; cotton, 95 cents per bale of 500 pounds; passenger fare, $3, or 4.47 cents per mile.

Vicksburgh and Jackson, 46 miles—sugar, coal, iron, and manure, 40 cents per 100 pounds; salt, 60 cents per sack; corn and grain, 10 cents per bushel; dry goods, 8 cents per cubic foot; cotton 87½ cents per bale of 400 pounds; horses and carriages, 12 cents per mile each; passenger fare, $3, or 6.38 cents per mile.

West Feliciana Road, 24 miles—freight, merchandise, provisions, etc., 50 cents per 100 pounds through; passenger fare 75 cents, or 3.1 cents per mile.

Lexington and Ohio, 28 miles—coal, corn and grain, 5 cents per bushel; iron, sugar, salt, butter, groceries and dry goods, light and bulky merchandise, hemp, bagging, and rope, 12½ cts. per 100 pounds; horses, $2 each; carriages, $2 to 3 each; passenger fare $1 25, or 4.46 cents per mile.

Madison and Indianopolis Railroad, 86 miles—coal, and wheat, 9 cents; corn, 8 cents; oats, 7 cents; flour, 35 cents; pork, lard, and salt, 50 cents per barrel; iron, five dollars per ton; groceries, dry goods, and light and bulky articles, 35 cents per 100 pounds; specie, one dollar per thousand; live hogs, 50 cents through; horses. $1 50 each, or one dollar with a passenger; passenger fare, $2 50, or 2.9 per mile.

Little Miami, 84 miles—coal, iron, sugar, salt, butter, groceries, and dry goods, $3 20 per ton; corn and grain, 7 cents per bushel; light and bulky articles, $4 per ton through; horses, 4 cents each per mile, carriages the same; passenger fare, $2, or 2.38 cents per mile.

Mad River, 102 miles—coal, iron, and manures $5 per ton; corn, 11 cents, wheat, 12½ cents per bushel; flour, 45 cents per barrel; sugar, salt, and butter, 32 cents, and bulky articles 42 cents per 100 pounds; carriages, by weight, and horses by agreement; passenger fares $3 50, or 3.18 cents per mile.

Mansfield and Sandusky, 56 miles—iron, coal, and manure, $1 60 per ton; corn, 6 cents, wheat, 7 cents per bushel; sugar, salt, and butter, $2, dry goods, $2 50, bulky and light articles, $3 per ton, through; horses and carriages each 4 cents per mile; passenger fares, $1 50, or 2.67 cents per mile.

Michigan Central, 146 miles—iron, manure, coal, corn, grain, groceries, 39 cents per 100; salt, butter, beef, pork, fish, and sugar, $1, flour, 66 cents, whisky, beer, and cider, $1 10 per barrel; corn and grain, 39, wheat, 33 cents per 100 through; carriages, 45 cents per 100 pounds; horses, $2 35; hogs and calves, $1 64; sheep, $1 10 each; passenger fares, $4 40, or 3 cents per mile.

Southern Michigan, 70 miles—manure and iron, 24 cents, sugar and butter, 34 cents per 100; corn and grain, 11 cents per bushel; flour, 40 cents per barrel; salt, 34 cents per barrel through; passenger fares, $2, or 2.85 cents per mile.

Albany and Schenectady, 17 miles—iron, coal, and manure, $1 per ton; sugar, salt, groceries, butter, dry-goods, and bulky articles, $1 25

per ton ; horses, $2 ; carriages, $1 to 2 each ; passenger fare, 50 cents, or 2.94 cents per mile.

Troy and Schenectady, 20½ miles—rates same as on Albany and Schenectady ; pasenger fare, 50 cents, or 2.43 cents per mile.

Utica and Schenectady, 78 miles—*prohibited* from carrying freight, except when the canal is closed, and then canal tolls are added to the ordinary freight charges; passenger fare, $3, or 3.84 cents per mile.

This line, in connection with the other lines from Albany to Buffalo, run a train at 1½ cents a mile for emigrants.

Utica and Syracuse, 53 miles—same as Utica and Schenectady Road; passenger fare, $2, or 3.77 cents per mile.

Syracuse and Auburn, 26 miles—coal, iron, and manure, 8 cents, sugar, salt, groceries, butter, and dry goods, 10 cents, and bulky merchandise, 20 cents per 100 pounds ; horses, $1 ; carriages, $1 to $1 50 each ; passenger fare, $1, or 3.84 cents per mile.

Auburn and Rochester, 77 miles—corn and grain, 27 cents, sugar, salt, butter, groceries, and dry goods, 20 cents, light and bulky articles, 30 cents per 100 pounds ; horses, $3 ; carriages 5 to $7, according to size ; passenger fare, $3, or 3.89 cents per mile.

Rochester and Attica, 44 miles—coal, iron, and manure, ½ cent per ton ; grain, 1.5 cent per bushel ; butter, salt, and sugar, 2.5 cent per 100 ; groceries and dry goods, 4½ mills per 100 ; bulky and light articles, 5 mills, *all per mile ;* horses and carriages, 6¼ cents per mile each ; passenger fare, $1 56, or 3.54 cents per mile.

Attica and Buffalo, 31½ miles—corn and grain, 3 cents per bushel ; butter and sugar, 12 cents per 100 through ; passenger fare, 94 cents, or 2.98 cents per mile.

Buffalo and Niagara Falls, 22 miles—freight, 10 to 12 cents per 100 pounds ; passenger fare, 75 cents, or 3.4 cents per mile.

Lockport and Niagara Falls, 24 miles—passenger fare, 75 cents, or 3.12 cents per mile.

RAILROADS IN MASSACHUSETTS.

Statement of the length of eleven Railroads in Massachusetts, with their Branches; together with their cost, including stations and machinery, and their income, expenses of working, and rates of dividend paid, in 1847.

Railroads.	Length.	Cost.	Income.	Expenses.	Div'nds. Per ct.
Boston and Providence,	41	$2,544,717	$363,328	$175,345	7½
Branches, - -	6.6				
Boston and Worcester, -	44¾	4,113,609	722,170	381,985	10
Branches, - - -	14				
Boston and Lowell, - -	26	1,956,719	448,555	253,408	8
Branch, - - -	2				
Eastern, - - -	53	2,937,206	424,840	135,083	8
Branches, - -	20				
Taunton Branch, - -	11	303,742	53,727*	18,278*	8
New Bedford, - -	20	483,882	91,044*	29,519*	8
Branch, - - -	1				

Railroads.	Length.	Cost.	Income.	Expenses.	Div'nds. Per ct.
Western,	156	8,769,473	1,325,336	676,690	8
Branch,	18.65				
Norwich,	66	2,187,249	234,895	141,433	0
Boston and Maine,	73	3,021,172	492,510*	186,032*	9
Branch,	9				
Nashua,	14½	500,000	157,335	96,937	10
Fitchburg,	50	2,406,723	376,110*	153,099*	10
Branches,	5				
Total,	621	$29,224,492	$4,689,446	$2,247,709	

Of these 621 miles of road, 126½ miles consist of double track, and 76 of branches. Besides the 16 branches embraced in the above statement there are five other branch railroads, already built, or in progress, at the expense of independent companies, which are, or when finished will be, worked by the companies above named, measuring 26 miles in length. The proceeds from the working of these branches go into the above statement of income, and the rents, or tolls, paid for the use of them, go into the account of expenses.

* Exclusive of amount collected for transportation on other roads, and paid over to them.

MASSACHUSETTS RAILROADS, RECENTLY OPENED WHOLLY OR IN PART.

Railroads.	Length.	Cost.	Receipts.	Expenses.	Div'nds. Per ct.
Old Colony,	37⅛	$1,636,632	$171,153	$74,719	6½
Fall River,	41 4-5	1,070,988	111,354	77,986	0
Prov. and Worcester.*	43½	1,756,755	30,401		0
Connecticut River,	36	1,167,156	123,951	50,018	7
Hartford and N. Haven,†	5⅞	193,402			
Pittsfield and N. Adams,	18⅜	446,353	25,974	17,798	0
Berkshire,‡	21	600,000	42,000		6
Vermont and Mass.§	58½	1,143,638	6,292		0
Cheshire,§	53¾	949,212			0
Stoughton Branch,‡	4	94,576	24,951	18,823	0
Dorcester and Milton,‡	3½	74,265			0
Essex,‡	2	160,252	3,594		0
Total,	326	$9,099,827	$439,670	$239,344	
Grand total,	947	$38,324,319	$5,129,116	$2,487,053	

* Opened October 20. † United with railroad in Connecticut. ‡ Leased. § Leased and unfinished.

In addition to the above, the following railroads are chartered, the companies organized, and the amount stated paid in by the stockholders or expended on the works:—

Railroads.	Length.	Am't paid.	Railroads.	Length.	Am't paid.
South Shore,	11	$42,190	Grand Junction,	—	$450,947
Cape Cod Branch,	27 4-5	257,433	Lowell and Andover,	12½	106,064
Worcester & Nashua,	45½	567,850	Stony Brook,	13	54,825
Norfolk County,	25	32,345			
Peterboro' and Shirley,	12	111,955	Total,	146½	$1,624,609

Including the above expenditure on unfinished railroads, the amount expended on railroads in Massachusetts to the end of 1847 is $39,948,928, of which three-fifths paid in the last year dividends of 8 per cent. or upwards.

TUNNELS ON RAILROADS AND CANALS.

In the United States.—The longest tunnel in the United States is believed to be on the Chesapeake and Ohio Canal, 25 miles above Hancock. It is 3,118 feet long, 24 feet chord, and 17 feet from the crown of the arch to the water surface. If this canal should ever be extended to the Ohio, it will require a tunnel 4.05 miles long through the Alleghany Mountain. There are numerous other tunnels in this country, of which an account will be given hereafter.

In England.—In 2,700 miles of *canals* there are 48 tunnels of the total length of 40 miles. The Worcester and Birmingham Canal to Dudley, 13 miles, has 3 tunnels of 6,325 yards. The Ellesmere and Chester Canal, 1,262 yards of tunnelling. The Kingston and Leominster Canal, 45 miles, 2 tunnels of 5,100 yards. Leicester and Northampton Union Canal, 44 miles, 4 tunnels of 3,212 yards. The canal tunnel under Standige, between Manchester and Huddersfield, extends under ground upwards of *thres miles*, and is 220 yards below the surface.

The tunnel of the Liverpool and Manchester Railway, under Liverpool is 1 mile and 240 yards in length. It is an instructive illustration of the necessity of accurately measuring the probable amount of trade and travel before determining the dimensions of an important work, that the Liverpool and Manchester Railway Company are now commencing the construction of *another tunnel*, parallel to the present one—it proving to be altogether insufficient to transact the business offering.

The Chester and Holyhead Railway has 3 tunnels in 84 miles, amounting together to 2,160 yards, besides the iron tunnel bridge across the Menai.

The Great Western Railway, from London to Bristol, has 6 tunnels in 17 miles; one of which, the Box Tunnel, is 3,168 yards in length.

The London and Birmingham Railway Company are constructing a tunnel under the city of London, 2 miles in length, from the Western side of Maiden Lane to the Fleet prison yard.

The Sheffield and Manchester Railway Company has 1 tunnel above *three miles* in length; and, like the Liverpool and Manchester Railroad Company, are engaged in constructing another parallel to it, to accommodate their enormous business.

The Matlock, Buxton, and Manchester Railway Company, are making their road, under the superintendence of the experienced Mr. Stephenson, through the High Peak of Derbyshire—one of the roughest and most difficult sections of the globe for the construction of a railway. There will necessarily be many and long tnnnels.

In France and Italy.—The St. Quentin Canal, from Cambray to Chauny, 58 miles, has 4½ miles of tunnels. The Rouen and Havre Railway, 45 miles, has 8 tunnels, amounting in the aggregate to 6,294 yards.

The railway to connect Savoy with Piedmont, uniting the French system of railroads with the Italian, is to pass through Mount Cenis. The height of Cenis is 11,460 feet. From this may be inferred the character of the tunnel. It is said that a machine recently invented and approved by the French government, has been applied to the boring of this tunnel, and completes more than five metres of bore per day.

The railway from Genoa to Turin, 130 miles, will pass through the Appenines, by a tunnel over 7 miles long. The government of Sardinia is now engaged in its construction.

Such are a few of the tunnels finished, and in progress abroad. A consideration of them will tend to awaken attention to the great importance of saving daily and annual expenditure by a sufficient outlay in the first instance.—[*American R. R. Journal.*

TOLLS ON THE NEW YORK STATE CANALS.

Amount of Tolls collected on the New York State Canals during the season of navigation in each year since 1820.

Years.	Amount.	Years.	Amount.	Years.	Amount.	Years.	Amount.
1820,	$5,437	1827,	$859,058	1834,	$1,339,799	1841,	$2,034,882
1821,	14,388	1828,	838,444	1835,	1,548,972	1842,	1,749,204
1822,	64,072	1829,	813,137	1836,	1,614,680	1843,	2,081,585
1823,	152,958	1830,	1,056,922	1837,	1,293,130	1844,	2,446,375
1824,	340,761	1831,	1,223,802	1838,	1,588,848	1845,	2,646,181
1825,*	566,113	1832,	1,229,483	1839,	1,616,382	1846,	2,756,121
1826,	762,003	1833,	1,463,715	1840,	1,775,747	1847,	3,650,000

*Erie Canal opened from Lake Erie to the Hudson river, October, 1825.

Statement showing the comparative ratio of Expenses to gross Receipts, and the comparative cost per mile run on various Railroads, during the year 1846.

Names of Roads.	Rate of exp. to gross receipts.	Cost per mile run.	Total receipts.	Total expenses.
Georgia,	.38	$0 61	$400,935 46	$157,902 36
South Carolina,	.51	0 87	589,081 52	302,369 72
Boston and Lowell,	.55	1 05	384,102 29	212,233 62
" Maine,	.51	0 65	349,136 56	179,734 83
" Providence,	.47	0 85	360,375 03	169,670 48
" Worcester,	.51	0 96	554,712 46	283,866 11
Fitchburg,	.41	0 58	286,645 36	117,447 34
Western,	.47	0 72	878,417 89	412,679 80
Baltimore and Ohio,	.48	0 64	895,315 22	429,100 28
Central, (Georgia,)	.56	0 67	303,439 96	170,236 90

Number of boats built at Cincinnati, and other points on the Ohio river, from 1st Dec. 1847, *to 1st Dec.* 1848.

THE following list, says the *Gazette*, includes such, only, as have arrived at Cincinnati:

		Tonnage.	Value.
28	Cincinnati, O.,	10,600	$687,000
16	Elizabethtown, Pa.,	3,000	224,000
12	Brownsville, Pa.,	1,509	178,000
8	Wheeling, Va.,	1,844	130,000
5	Pittsburgh, Pa.,	1,087	69,000
5	Shousetown, Pa.,	1,061	91,000
4	Freedom, Pa.,	570	39,000
2	Lawrence county, O.,	140	5,500
2	Kanawha, Va.,	410	24,500
1	Portsmouth, O.,	295	13,000
1	Glasgow, Pa.,	138	9,500
1	Zanesville, O.,	111	8,500
1	Jessamine county, Ky.,	132	6,000
1	Marietta, O.,	50	2,700
2	Newport, Ky.,	316	16,000
1	Wellsville, O.,	143	8,000
Total, 90		21,406	$1,512,700

MANUFACTURES IN ST. LOUIS.

MANUFACTURE OF COTTON.

During the last year, Messrs. Adolphus Meier & Co., have erected a new factory in Soulard's Addition of the city, and will increase the number of their spindles to 2,600, during the present month. They design to increase the number of spindles to about 4,000, during the present year.

These gentlemen appear to have felt their way with great caution, and we think no better evidence need be required in regard to the profits of cotton spinning in St. Louis, than the enlargement of this establishment. They employ in their factory about 170 hands.

MANUFACTURE OF COTTON BATTING.

We were much interested some time since in a visit to the establishment of Messrs. Bredell & Baldwin, on Second street. Here is an unpretending establishment, working with a small engine and employing nine hands and some of them females and boys—manufacturing 800 pounds of cotton batting and 200 pounds of caulking per diem. We were informed that the batting sold at 11 cents per pound, and that the establishment was not sufficient to supply the demand. This little establishment works up about 600 bales of cotton per annum, equal to the product of about 100 hands, and the process adds about 100 per cent. to the value of the raw material. We did not inquire the amount of capital required to put the establishment in operation; but we should suppose from appearances that it did not cost more than probably $5,000. We were never before so forcibly impressed with the great difference between the cost and labor required in producing and manufacturing as in this instance.

The proprietors design erecting suitable buildings in the spring, and expect to manufacture 2,000 pounds batting and 400 pounds calking per diem, besides the manufacture of patent glazed cotton wadding.

MANUFACTURE OF FLOUR IN ST. LOUIS.

Since the commencement of the year 1848, three mills have gone into operation—one at the corner of Cherry and Collins streets, owned by Messrs. L. R. Chaffin & Co, with two run of stones, 4 feet, capable of grinding from 550 to 600 bushels of wheat per diem.

The Gay Street Mill, in the western part of the city, with two run of stones, capable of turning out about 120 barrels of flour per diem.

And the O'Fallon Mill, near the intersection of Fourth and Fifth streets, which we understand averages about 68 barrels of flour per diem.

There were 15 flouring mills in operation at the beginning of the year, and from the information that we obtained from the millers a year ago, there was manufactured in 1847 about 365,000 barrels of flour. We have not waited on all the establishments this winter, but all of whom we have inquired agree that the mills have done a larger business in 1848 than in 1847; and we think the quantity of flour manufactured in St. Louis in 1848 may be fairly set down at 500,000 barrels.

WESTERN LITERATURE.

Western Law Journal—edited by T. WALKER and C. D. COFFIN, of Ohio, and C. GILMAN, of Illinois: published at Cincinnati, by J. F. Desilver, No. 112 Main street, at three dollars per annum, in advance.

We are indebted to the kindness of the editors for two entire volumes of this valuable Journal; and we take pleasure in recommending it to members of the bar as a work highly worthy of their patronage. We profess to know something of the value of law books, and are fully convinced that a volume of this work contains as much useful matter to the practitioner, as can be purchased from the book stores at double its cost. Indeed, the work contains much that is useful that cannot be obtained elsewhere.

We invite those of our professional friends who have not examined the work, to call at our office and satisfy themselves in regard to its merits. Nor should the patronage of this work be confined to lawyers alone; every intelligent merchant should be a subscriber also—for here he would find many things in relation to the laws of the several States, which are frequently necessary to be known by the man of business, and which are not always known to the local lawyer; besides, many a fee would doubtless be saved by one who would read this work carefully.

The Howard Queen.—This is the title of a "prize tale," from the pen of our citizen, EDMUND FLAGG, Esq. We are indebted to the publishers for a copy of this popular book, but our engagements have not permitted us to give it a careful perusal. We may, at some future time, give it a suitable notice.

CLUBS.

☞ CLUBS, composed of four individuals, sending us ten dollars, will be furnished with the WESTERN JOURNAL for one year. The twelve numbers will constitute two volumes—and a general index will be furnished with the sixth and twelfth numbers.

JOHN D. M'MURRAY. JAMES M. DORMAN.

M'MURRAY & DORMAN,

IRON RAILING MANUFACTORY, corner of Third and Pine Streets, continne to manufacture at the above establishment, all kinds of Plain and Ornamental Iron Railing, Balconies, Bank and Jail Doors, Book Safes, Fire-Vaults, Iron Window Shutters, Iron Awnings, Lightning Rods, Bedsteads, Gratings, and in fact, any thing which can be formed of Iron.

BURD, RUCKER & CO.,

No. 45 Main Street, St. Louis, Missouri,

MANUFACTURERS of Copper, Tin, and Sheet Iron Ware, Lead Pipe, Sheet Lead Bells, weighing from 20 to 400 pounds, Brass Castings, Beer and Soda Pumps, and general Stove Dealers.

WESTERN BANK NOTE,

Card, Seal, and General Engraving Office,

No. 25 Chesnut Street, nearly opposite the Republican Office,

BANK NOTES, Bills of Exchange, Bill Heads, Diplomas, Business, Professional, Visiting, Wedding and other Cards; Notarial, County, Odd Fellows, Sons of Temperance, Masonic and Probate Seals; Wood Cuts, Xylographic Plates, Stencil Brands, Jewelry, Silver Ware, &c., engraved in a superior manner, by

R. L. CAMPBELL.

N. B. Druggists' Labels, of every description, engraved and printed.

M. TARVER,

ATTORNEY AND COUNSELLOR AT LAW,

No. 97 Chesnut Street, St. Louis,

(TWO DOORS WEST OF THE POST OFFICE.)

T. F. RISK,

ATTORNEY AND COUNSELLOR AT LAW,

***Office*—23½ Second Street,**

Between Pine and Chesnut Streets, in the same building with the United States Land Office,

ST. LOUIS, MO.

CHARLES & HAMMOND,

BOOK AND JOB PRINTERS,

Corner Main and Olive Streets,

ST. LOUIS.

THE WESTERN JOURNAL,

PUBLISHED MONTHLY.

DEVOTED TO

AGRICULTURE, MANUFACTURES, MECHANIC ARTS, INTERNAL IMPROVEMENT, COMMERCE, AND GENERAL LITERATURE.

M. TARVER & T. F. RISK, Editors and Proprietors.

TERMS—THREE DOLLARS PER ANNUM, IN ADVANCE.

PUBLICATION OFFICE:
NO. 23½ SECOND STREET, between Pine and Chesnut, ST. LOUIS.

THE WESTERN JOURNAL is designed to embrace every subject connected with Agriculture, Commerce, Manufactures, Mechanic Arts, Mines and Internal Improvement.

A portion of the work will be appropriated to Statistics, which will be collected and arranged with reference to the leading subjects contained in the respective numbers.

The development of the vast resources of the Valley of the Mississippi, and the improvement of the intellectual and social condition of its inhabitants, will be constantly kept in view; and the leading article of each number will be devoted to the advancement of these objects. In attempting to illustrate and give direction to the economy connected with the leading pursuits of the country, the Editors have undertaken more than has been done or proposed by any other journal with which they are acquainted. And it is by their labors in this department mainly that they expect to make the work useful.

Contributions are solicited on all subjects properly embraced in the design of the work.

☞ CLUBS, composed of four or more individuals, will be furnished with the WESTERN JOURNAL at the rate of $2 50 per annum.

☞ Owing to the enlargement of the work, six numbers will hereafter constitute a volume, and a general Index will be made out to accompany the 6th and 12th numbers.

☞ Publishers of Newspapers who will give the foregoing prospectus one or more insertions in their papers, and pay one dollar, will be furnished with the work for one year.